



# Jawaharlal Nehru Smriti Government Post Graduate College Shujalpur, Distt. Shajapur (M.P.)

ACCREDITED Grade 'B' by NAAC

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## PROGRAMME OUTCOMES, PROGRAMME SPECIFIC OUTCOMES AND COURSE OUTCOMES

### BACHELOR OF ARTS (BA)

#### PROGRAMME OUTCOMES

Subjects	Outcomes
<u><b>Social Sciences</b></u> <u>Economics</u> <u>Geography</u> <u>Political Science</u> <u>Sociology</u> <u>History</u>	<p>After graduation a student will be able to</p> <p><b>PO:1</b> Disciplinary knowledge: Capable of demonstrating comprehensive knowledge and understanding of one or more disciplines that form a part of an undergraduate programme of study.</p> <p><b>PO:2</b> Communication Skills: Ability to express thoughts and ideas effectively in writing and orally; Communicate with others using appropriate media; confidently share one's views and express herself/himself; demonstrate the ability to listen carefully, read and write analytically, and present complex information in a clear and concise manner to different groups.</p> <p><b>PO:3</b> Critical thinking: Capability to apply analytic thought to a body of knowledge; analyse and evaluate evidence, arguments, claims, beliefs on the basis of empirical evidence; identify relevant assumptions or implications; formulate coherent arguments; critically evaluate practices, policies and theories by following scientific approach to knowledge development.</p> <p><b>PO:4</b> Problem solving: Capacity to extrapolate from what one has learned and apply their competencies to solve different kinds of non-familiar problems, rather than replicate curriculum content knowledge; and apply one's learning to real life situations.</p> <p><b>PO:5</b> Analytical reasoning: Ability to evaluate the reliability and relevance of evidence; identify logical flaws and holes in the arguments of others; analyse and synthesize data from a variety of sources; draw valid conclusions and support them with evidence and examples and addressing opposing viewpoints.</p> <p><b>PO:6</b> Research-related skills: A sense of inquiry and capability for asking</p>

	<p>relevant/appropriate questions, problematizing, synthesizing, and articulating; Ability to recognize cause-and-effect relationships, define problems, formulate hypotheses, test hypotheses, analyze, interpret and draw conclusions from data, establish hypotheses, predict cause-and-effect relationships; ability to plan, execute and report the results of an experiment or investigation.</p> <p><b>PO:7</b> Cooperation/Team work: Ability to work effectively and respectfully with diverse teams; facilitate cooperative or coordinated effort on the part of a group, and act together as a group or a team in the interests of a common cause and work efficiently as a member of a team.</p> <p><b>PO:8</b> Scientific reasoning: Ability to analyze, interpret and draw conclusions from quantitative/qualitative data; and critically evaluate ideas, evidence, and experiences from an open-minded and reasoned perspective.</p> <p><b>PO:9</b> Reflective thinking: Critical sensibility to lived experiences, with self-awareness and reflexivity of both self and society.</p> <p><b>PO:10</b> Information/digital literacy: Capability to use ICT in a variety of learning situations, demonstrate ability to access, evaluate, and use a variety of relevant information sources; and use appropriate software for analysis of data.</p> <p><b>PO:11</b> Self-directed learning: Ability to work independently, identify appropriate resources required for a project, and manage a project through to completion. Multicultural competence: Possess knowledge of the values and beliefs of multiple cultures and a global perspective; and capability to effectively engage in a multicultural society and interact respectfully with diverse groups.</p> <p><b>PO:12</b> Moral and ethical awareness/reasoning: Ability to embrace moral/ethical values in conducting one's life, formulate a position/argument about an ethical issue from multiple perspectives, and use ethical practices in all work. Capable of demonstrating the ability to identify ethical issues related to one's work avoid unethical behaviour such as fabrication, falsification or misrepresentation of data or committing plagiarism, not adhering to intellectual property rights; appreciating environmental and sustainability issues; and adopting objective, unbiased and truthful actions in all aspects of work.</p> <p><b>PO:13</b> Leadership readiness/qualities: Capability for mapping out the tasks of a team or an organization, and setting direction, formulating an inspiring vision, building a team who can help achieve the vision, motivating and inspiring team members to engage with that vision, and using management skills to guide people to the right destination, in a smooth and efficient way.</p> <p><b>PO:14</b> Lifelong learning: Ability to acquire knowledge and skills, including, learning how to learn", that are necessary for participating in learning activities throughout life, through self-paced and self-directed learning aimed at personal development, meeting economic, social and cultural objectives, and adapting to changing trades and demands of work place through knowledge/skill development/reskilling.</p> <p><b>PO:15</b> identify, explain and use the general principles, theories, and data</p>
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	<p>analytical techniques in their respective subjects /fields</p> <p><b>PO:16</b> use knowledge and skills of the respective subjects and use them in a variety of contexts</p> <p><b>PO:17</b> apply various tools to formulate positions in a wide range of problems.</p> <p><b>PO:18</b> do effective presentation, both visual and oral on particular problems and cases.</p> <p><b>PO:19</b> read texts and analyze evidences, arguments, and challenge the assumptions.</p>
<a href="#">Hindi Literature</a> <a href="#">English Literature</a>	<p><b>PO:1</b> Disciplinary knowledge: Capable of demonstrating comprehensive knowledge and understanding of one or more disciplines that form a part of an undergraduate programme of study.</p> <p><b>PO:2</b> Communication Skills: Ability to express thoughts and ideas effectively in writing and orally; Communicate with others using appropriate media; confidently share one's views and express herself/himself; demonstrate the ability to listen carefully, read and write analytically, and present complex information in a clear and concise manner to different groups.</p> <p><b>PO:3</b> Critical thinking: Capability to apply analytic thought to a body of knowledge; analyse and evaluate evidence, arguments, claims, beliefs on the basis of empirical evidence; identify relevant assumptions or implications; formulate coherent arguments; critically evaluate practices, policies and theories by following scientific approach to knowledge development.</p> <p><b>PO:4</b> Problem solving: Capacity to extrapolate from what one has learned and apply their competencies to solve different kinds of non-familiar problems, rather than replicate curriculum content knowledge; and apply one's learning to real life situations.</p> <p><b>PO:5</b> Analytical reasoning: Ability to evaluate the reliability and relevance of evidence; identify logical flaws and holes in the arguments of others; analyse and synthesize data from a variety of sources; draw valid conclusions and support them with evidence and examples, and addressing opposing viewpoints.</p> <p><b>PO:6</b> Research-related skills: A sense of inquiry and capability for asking relevant/appropriate questions, problematizing, synthesizing and articulating; Ability to recognize cause-and-effect relationships, define problems, formulate hypotheses, test hypotheses, analyze, interpret and draw conclusions from data, establish hypotheses, predict cause-and-effect relationships; ability to plan, execute and report the results of an experiment or investigation.</p> <p><b>PO:7</b> Cooperation/Team work: Ability to work effectively and respectfully with diverse teams; facilitate cooperative or coordinated effort on the part of a group, and act together as a group or a team in the interests of a common cause and work efficiently as a member of a team.</p> <p><b>PO:8</b> Scientific reasoning: Ability to analyze, interpret and draw conclusions from quantitative/qualitative data; and critically evaluate ideas, evidence, and</p>

	<p>experiences from an open-minded and reasoned perspective.</p> <p><b>PO:9</b> Reflective thinking: Critical sensibility to lived experiences, with self-awareness and reflexivity of both self and society.</p> <p><b>PO:10</b> Information/digital literacy: Capability to use ICT in a variety of learning situations, demonstrate ability to access, evaluate, and use a variety of relevant information sources; and use appropriate software for analysis of data.</p> <p><b>PO:11</b> Self-directed learning: Ability to work independently, identify appropriate resources required for a project, and manage a project through to completion. Multicultural competence: Possess knowledge of the values and beliefs of multiple cultures and a global perspective; and capability to effectively engage in a multicultural society and interact respectfully with diverse groups.</p> <p><b>PO:12</b> Moral and ethical awareness/reasoning: Ability to embrace moral/ethical values in conducting one's life, formulate a position/argument about an ethical issue from multiple perspectives, and use ethical practices in all work. Capable of demonstrating the ability to identify ethical issues related to one's work avoid unethical behaviour such as fabrication, falsification or misrepresentation of data or committing plagiarism, not adhering to intellectual property rights; appreciating environmental and sustainability issues; and adopting objective, unbiased and truthful actions in all aspects of work.</p> <p><b>PO:13</b> Leadership readiness/qualities: Capability for mapping out the tasks of a team or an organization, and setting direction, formulating an inspiring vision, building a team who can help achieve the vision, motivating and inspiring team members to engage with that vision, and using management skills to guide people to the right destination, in a smooth and efficient way.</p> <p><b>PO:14</b> Lifelong learning: Ability to acquire knowledge and skills, including, learning how to learn", that are necessary for participating in learning activities throughout life, through self-paced and self-directed learning aimed at personal development, meeting economic, social and cultural objectives, and adapting to changing trades and demands of workplace through knowledge/skill development/reskilling.</p> <p><b>PO:15</b> Acquaint the students with different forms of thoughts and styles used in Prose and poetry in the selected languages</p> <p><b>PO:16</b> make them able to express their thoughts in different styles of prose writings in the selected languages</p> <p><b>PO:17</b> introduce the students for appreciation and critical analysis.</p> <p><b>PO:18</b> develop their creative thinking and writing.</p> <p><b>PO:19</b> develop correct usage of grammar in the respective languages</p> <p><b>PO:20</b> enhance communication skills and writing skills through learning grammar in the respective languages</p> <p><b>PO:21</b> understand the origin and development of prose, poetry, drama, and novel/short story</p>
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## **PROGRAMME SPECIFIC OUTCOMES AND COURSE OUTCOMES**

### **PROGRAMME SPECIFIC OUTCOMES (PSO) For B.A. Programme: B.A. Three Year Programme with Economics as an Optional Subject**

<b>Sr. No.</b>	<b>On completing B.A. with Economics, the student will be able to:</b>
<b>PSO 1</b>	provide well-founded education in Economics
<b>PSO 2</b>	provide opportunity to pursue courses that emphasizes qualitative and theoretical aspects of economics.
<b>PSO 3</b>	discuss well-resourced learning environment of Economics.
<b>PSO 4</b>	pursue higher studies in special field of Economics.
<b>PSO 5</b>	gain structured curricula which supports academic development of students.

### **COURSE OUTCOMES (COS): B.A. Programme: B.A. Three Year Programme with Economics as an Optional Subject**

#### **COURSE I – MICROECONOMICS**

<b>Sr. No.</b>	<b>On completing the course, a student will be able to:</b>
<b>CO 1</b>	understand the basic concepts in Microeconomics
<b>CO 2</b>	learn to solve macroeconomic problems through a microscopic approach.
<b>CO 3</b>	define consumer behavior and consumer Equilibrium
<b>CO 4</b>	analyze the consequences of the government setting a binding price ceiling and a binding price floor.
<b>CO 5</b>	explain the price elasticities of demand and supply

#### **COURSE II: INDIAN ECONOMY**

<b>Sr. No.</b>	<b>On completing the course, a student will be able to:</b>
<b>CO 1</b>	introduce the features of Indian Economy
<b>CO 2</b>	explain development of Indian Economy since Independence.
<b>CO 3</b>	identify the various sectors of Indian economy-issues and prospects
<b>CO 4</b>	analyse Planning Programmes of the Indian Economy
<b>CO 5</b>	appraise current issues and problems of Indian economy.
<b>CO 6</b>	deal with agricultural Issues and its solution in the perspective of Indian Economy

### **COURSE III – MACRO ECONOMICS**

<b>Sr. No.</b>	<b>On completing the course, a student will be able to:</b>
<b>CO 1</b>	explain the various macroeconomic policies such as fiscal policies, monetary policies and income policies.
<b>CO 2</b>	understand the problems of inflation and measures to overcome it.
<b>CO 3</b>	solve out the issues of deflation and depression in an economy
<b>CO 4</b>	understand the concepts and theories of trade cycle.
<b>CO 5</b>	highlight the concepts of consumption and investment so as to study the demand in the economy

### **COURSE IV– PUBLIC FINANCE & INTERNATIONAL ECONOMICS**

<b>Sr. No.</b>	<b>On completing the course, a student will be able to:</b>
<b>CO 1</b>	gain basic information to students on the scope of Public Economics
<b>CO 2</b>	understand the significance of Government and its functions.
<b>CO 3</b>	deal with Governmental finance and its economic impacts.
<b>CO 4</b>	understand the mechanism of framing a budget.
<b>CO 5</b>	understand the basic concepts and theories of international trade and enable the students to have a basic understanding of the emerging trends, issues and policies in the field of international Economic system.
<b>CO 6</b>	analyse the basic concepts and theories of international trade
<b>CO 7</b>	identify the various international institutions such as IMF and the ways adopted by them to maintain international liquidity management.

### **COURSE V – DEVELOPMENT & ENVIRONMENT ECONOMICS**

<b>Sr. No.</b>	<b>On completing the course, a student will be able to:</b>
<b>CO 1</b>	understand the basic concepts of Development and Growth
<b>CO 2</b>	analyse various tools for measuring growth and development
<b>CO 3</b>	explain various theories of economic growth and development
<b>CO 4</b>	explain issues and challenges on economic development
<b>CO 5</b>	identify the new economic indicators such as HDI & GDI

### **COURSE VI: – STATISTICS**

<b>Sr. No.</b>	<b>On completing the course, the student will be able to:</b>
<b>CO 1</b>	Understands meaning and development of statistics.
<b>CO 2</b>	Understands measures of central tendency – Mean, Median, Mode.
<b>CO 3</b>	Understand time series analysis – concept and component

**PROGRAMME SPECIFIC OUTCOMES (PSO) For B.A. Programme: B.A. Three Year  
Programme with Geography as an Optional Subject**

<b>Sr. No.</b>	<b>On completing B.A. with Geography, the student would have:</b>
<b>PSO 1</b>	firm foundations in the fundamentals and application of recent Geographical and scientific theories
<b>PSO 2</b>	understood the ways and means of surviving the life with geographical situation around us, which varies spatially and temporally.
<b>PSO 3</b>	acquired the knowledge of sustaining and competing in this competitive world. They should also be to interpret and analyse quantitative data.
<b>PSO 4</b>	firm foundations in the fundamentals and application of recent Geographical and scientific theories
<b>PSO 5</b>	understood the natural processes on the earth and beneath the earth surface, which directly and indirectly affect the life on earth.

**COURSE OUTCOMES (COS): B.A. Programme: B.A. Three Year Programme with Geography  
as an Optional Subject**

<b>Course I : Human Geography: Environment and Culture</b>	
After successful completion of the course, students will be able to:	
<b>CO1</b>	discuss and describe the major concepts and key principles of Human Geography including place, space, scale and landscape.
<b>CO2</b>	appreciate the diversity of the cultural backgrounds and knowledge.
<b>CO3</b>	approaching Problem Solving from a geographic perspective by understanding the role location plays.
<b>CO4</b>	understand the population related issues likes; population explosion, human development etc.
<b>CO5</b>	understand the types and pattern of urban and rural settlement.

<b>Course II : Physical Geography-Lithosphere (Geomorphology)</b>	
After successful completion of the course, students will be able to:	
<b>CO1</b>	understand the internal structure of the earth, rocks that compose it and forces within the earth that act to deform it.

<b>C02</b>	learn about the contribution of ancient Indian scholars in the development of Physical Geography
<b>C03</b>	analyze how the natural and anthropogenic operating factors affect the development of landforms.
<b>C04</b>	understand about the denudation processes that unceasingly act at the earth's surface to shape landforms and reduce relief.
<b>C05</b>	assess the role of structure, stage, and time in shaping the landforms.

<b>Course III : Cartographic Techniques (Practical I)</b>	
After successful completion of the course, students will be able to:	
<b>C01</b>	develop hands on skills in diagrammatic representation of data.
<b>C02</b>	comprehend thematic mapping techniques, its cartographic representation and interpretation.
<b>C03</b>	develop knowledge about relief profile.
<b>C04</b>	will be able to relate with theoretical knowledge of geography.
<b>C05</b>	take up Cartography as a profession.

<b>Course IV: General Cartography (Practical II)</b>	
After successful completion of the course, students will be able to:	
<b>C01</b>	learn the principles of Map Design, Map Reading.
<b>C02</b>	create professional and aesthetically pleasing maps through thoughtful application of Cartographic Conventions
<b>C03</b>	learn to Construction of Scale
<b>C04</b>	will be able to relate with theoretical knowledge of geography.
<b>C05</b>	comprehend the principles and types of Surveying and learn the Chain and Tape survey.

<b>Course V: Physical Geography (Atmosphere and Hydrosphere)</b>	
After successful completion of the course, students will be able to:	
<b>C01</b>	understand the importance of Atmosphere and structure, composition of Atmosphere
<b>C02</b>	understand the types of winds and heat balance
<b>C03</b>	understand weather phenomena winds, humidity and precipitation
<b>C04</b>	understand the ocean floor and relief of the ocean bottom the properties like temperature, density, salinity of ocean water
<b>C05</b>	understand the tides, tide generating forces, types of tides and tidal effects in coastal areas

<b>Course VI: Economic Geography</b>	
After successful completion of the course, students will be able to:	
<b>C01</b>	understand the scope and content of economic geography; economic activities- primary, secondary, tertiary
<b>C02</b>	focuses on the concept of agricultural geography; Cultivation and their association with different natural and human conditions of the major cereal crops.
<b>C03</b>	understand the power resources; coal, petroleum and water



<b>CO4</b>	understand the ocean floor and relief of the ocean bottom the properties like temperature, density, salinity of ocean water
<b>CO5</b>	understand the tides, tide generating forces, types of tides and tidal effects in coastal areas

<b>Course VII : Practical</b>	
After successful completion of the course, students will be able to:	
<b>CO1</b>	prepare weather map of India and interpretation map of weather map.
<b>CO2</b>	understand the use of meteorological instruments like; thermometer, wet bulb thermometer, Rain Gauge and Wind Vane etc.
<b>CO3</b>	understand the classification of Indian Metrological Data and Metrological data collection method.
<b>CO4</b>	do diagrammatic representation of climatic data with the help of Line, Hythergraph, Polygraph and Climograph
<b>CO5</b>	learn of Different methods of Prismatic Compass Survey.

<b>Course VIII: Geography of India</b>	
After successful completion of the course, students will be able to:	
<b>CO1</b>	detailed exposure to the physical features of India.
<b>CO2</b>	depth knowledge of different resource base of India
<b>CO3</b>	understanding the socio-cultural aspects of India
<b>CO4</b>	understand the physical division and drainage system of Madhya Pradesh. Also learn about the cultural aspect in the context of Madhya Pradesh.
<b>CO5</b>	understand the Political aspect of India, state reorganisation, Boundary related issues and geopolitics of India in the context of South Asia.

<b>Course IX: Environment and Resource</b>	
After successful completion of the course, students will be able to:	
<b>CO1</b>	understand the meaning, nature, concept and classification of environment. Also understand the relation between human and environment.
<b>CO2</b>	demonstrate knowledge about the concept of biodiversity and sustainable development. Along with this student will also learn the environmental education and legislation.
<b>CO3</b>	understand about contemporary environmental issues like; food security, global warming and green house effects etc.
<b>CO4</b>	understand the soil formation, soil profile, their distribution on globe and also learn the factors behind the degradation of soil.
<b>CO5</b>	understand the techniques of resource conservation and resource management.

<b>Course X: Practical</b>	
After successful completion of the course, students will be able to:	

<b>CO1</b>	understand the Fundamentals of Statistics, sources, type of data and calculate the mean, median, mode and standard deviation.
<b>CO2</b>	learn the techniques and draw the different type of map projection.
<b>CO3</b>	understand arial photography and remote sensing. Also, analysis of satellite imageries with the help of Geographical Information System.
<b>CO4</b>	analyze of Topographical sheet and Report writing of Village Survey.
<b>CO5</b>	learn the different methods of Plane table survey.

**PROGRAMME SPECIFIC OUTCOMES (PSO) For B.A. Programme: B.A. Three Year  
Programme with Political Science as an Optional Subject**

<b>Sr. No.</b>	<b>On completing B.A. with Political Science, the student would have:</b>
<b>PSO 1</b>	become well versed with the functioning of the State and the Government.
<b>PSO 2</b>	become well acquainted with the history of Political Thought.
<b>PSO 3</b>	become well versed with international politics, international laws and India's Foreign Policies and also those of other countries.
<b>PSO 4</b>	imbibed good leadership qualities.
<b>PSO 5</b>	acquired sufficient knowledge for choosing Political Science for attempting civil services examination in the subject.

**COURSE OUTCOMES (COS): B.A. Programme: B.A. Three Year Programme with Political  
Science as an Optional Subject**

**Course I : POLITICAL THEORY**

After successful completion of the Course, a student will be able to:

<b>CO1.</b>	understand the meaning, importance, & different ideologies and approaches of political theory.
<b>CO2.</b>	explain the concept of state and its changed nature.
<b>CO3.</b>	understand how the two concepts are related in power and power. Both these concepts will further enhance their understanding of politics.
<b>CO4.</b>	understand the various dimensions of sovereignty and its relation to the state.
<b>CO5.</b>	understand the concept of liberty, equality, justice and rights. An understanding of these basic political concepts will be helpful to students in the real political world.

## **Course II: INDIAN CONSTITUTION**

After successful completion of the Course, a student will be able to:

<b>CO1:</b>	understand the constitutional development in India
<b>CO2:</b>	write an answer as to how the Constituent Assembly was constituted.
<b>CO3:</b>	explain the Preamble of the Constitution and the Fundamental Rights, Directive Principles of State Policy
<b>CO4:</b>	understand role and function of President, Prime Minister, Governor, Chief Minister, Parliament,
<b>CO5:</b>	will be able to answer questions relating to the functions and role of the State Legislatures and Courts. Identification of the division of power given in the constitutional system

## **Course III : REPRESENTATIVE POLITICAL THINKERS**

After successful completion of the Course, a student will be able to:

<b>CO1:</b>	understand the history of ancient Indian political thought, its specialty and the ideologies of ancient Indian political thinkers Manu and Kautilya.
<b>CO2:</b>	Understand the development of western political thought, its characteristics and the father of political science, Plato and his disciples will be able to understand the ideas of the scientific thinker Aristotle.
<b>CO3:</b>	Get acquainted with the modern political thinkers and Machiavelli's ideas of renaissance, Green's idealistic, Bentham's utilitarian and Mill's ideologies of liberty.
<b>CO4:</b>	take up a comparative study of the views of Marx, Lenin and Rai and explain the communist ideology.
<b>CO5:</b>	recognize the thoughts of Mahatma Gandhi, Ambedkar, Lohiya and Deendayal Upadhyay on various theories, ideas, ideologies of Indian thought.

## **Course IV : CONSTITUTION OF MAJOR COUNTRIES**

After successful completion of the Course, a student will be able to:

<b>CO1:</b>	understand development of the constitution of the United Kingdom, its features, constitutional, the constitution of the institutions will be able to explain their rights and functions.
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<b>CO2:</b>	understand the oldest and most concise constitution, the US President (Executive) and the judiciary and the legislature and the bipartisan political party system.
<b>CO3:</b>	understand the constitution of other major countries. Along with this, will understand all the constitutional posts and the formation and working of the political institutions.
<b>CO4:</b>	get acquainted with the clear effect of communism in the constitution of China, the dictatorship of the proletariat, the leadership of the communist party and the constitution of Pakistan, you will be able to answer.
<b>CO5:</b>	understand the features of Nepal, Bhutan and the Constitution of Afghanistan.

### **Course V : INDIAN FOREIGN POLICY**

After successful completion of the Course, a student will be able to:

<b>CO1:</b>	understand the development, characteristics, principles and determinant elements etc. of foreign policy of independent India.
<b>CO2:</b>	understand India's relations with the neighbouring countries, the foreign policy of Pakistan, Bangladesh, Sri Lanka, Bhutan and Afghanistan etc. As a result, they will be able to explain their relationship with India.
<b>CO3:</b>	understand India's relations with America, Russia and China in this direction as to how India is related to the emperors.
<b>CO4:</b>	have knowledge of Regional Organizations like SAARC, ASEAN. The OPAC will be able to write an answer by understanding the formation, objectives and role of India in BRICS.
<b>CO5:</b>	come across International Issues - Human Rights, Globalization, Environment Knowledge of important facts on armament, cross-border terrorism and be able to understand the problems and challenges posed by them. Students will be associated with international events and burning problems.

## **Course VI : PUBLIC ADMINISTRATION**

After successful completion of the Course, a student will be able to:

<b>CO1:</b>	understand the meaning of public administration, the nature area and the concept of equality, inequality, new public administration of public administration and private administration.
<b>CO2:</b>	answer questions related to staff and intelligence agency and Chief Executive.
<b>CO3:</b>	understand the functions of personnel administration, recruitment training, promotion, Union Public Service Commission, dispute resolution, O&M etc.
<b>CO4:</b>	explain budgeting, accounting and auditing.
<b>CO5:</b>	understand the transparent and accountability of development administration, bureaucracy, role of Panchayati Raj Institutions, Lokpal and Lokayukta, good governance and e-governance etc. Students will also have information about the government system.

### **PROGRAMME SPECIFIC OUTCOMES (PSO) For B.A. Programme: B.A. Three Year Programme with Sociology as an Optional Subject**

<b>Sr. No.</b>	<b>On completing B.A. with Sociology, the student would have:</b>
<b>PSO 1</b>	conceptual knowledge of all the major concepts in the branch will help the students in their daily life
<b>PSO 2</b>	studied of society, social research, and social reconstruction.
<b>PSO 3</b>	acquired knowledge about the basic structure of Indian society.
<b>PSO 4</b>	acquired knowledge in solving problems like farmer stress, drug addiction training, pollution etc..
<b>PSO 5</b>	acquired insight into criminal problems such as juvenile delinquency etc.
<b>PSO 6</b>	developed interest It will motivate for higher studies. The study of society will be helpful in success in competitive examination.
<b>PSO 7</b>	employment opportunities in social sector like Women Development & Support Group etc.

**COURSE OUTCOMES (COS): B.A. Programme: B.A. Three Year Programme with Sociology  
as an Optional Subject**

**Course I: ELEMENTARY CONCEPTS OF SOCIOLOGY:**

**After successful completion of the Course, a student will be able to:**

<b>CO1:</b>	be familiar with the concept of sociology
<b>CO2 :</b>	be familiar with their culture and civilization
<b>CO3:</b>	be familiar with the education of culture, socialization, social control, and change.
<b>CO4:</b>	understand the principle of cultural irony and understand the struggle of difference in generations.
<b>CO:5</b>	student will be familiar with various social issues

**Course II: INDIAN SOCIETY**

**After successful completion of the Course, a student will be able to:**

<b>CO1:</b>	have knowledge about the basic structure of Indian society.
<b>CO2 :</b>	understand the structure of Indian society, rural-urban continuum.
<b>CO3:</b>	have knowledge about information about social institutions.
<b>CO4:</b>	have knowledge on casteism, communalism, cybercrimes, gender inequality etc.
<b>CO5:</b>	select various employment resources.

**Course III: SOCIAL PROCESSES AND CHANGE:**

**After completing the course, a student will be able to:**

<b>CO1:</b>	Students will get to know the concept of social structure.
<b>CO2 :</b>	The student will be familiar with the processes of social organization.
<b>CO3:</b>	The student becomes familiar with the processes of social disintegration.
<b>CO4:</b>	Students will get information about social legislations.
<b>CO5:</b>	The student will be familiar with the processes of social change.

**Course IV: RURAL URBAN AND TRIBAL SOCIETIES**

**After successful completion of the Course, a student will be able to:**

<b>CO1:</b>	get introduced to rural environment
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<b>CO2 :</b>	acquaint himself/herself with the institution of family and the socio-political situation of the farming society in India
<b>CO3:</b>	be familiar with city problems
<b>CO4:</b>	be familiar with the causes of the decline of human character at present.
<b>CO5:</b>	be familiar with the status and problems of caste in tribal societies.

### **Course V: SOCIOLOGICAL THINKERS**

After successful completion of the Course, a student will be able to:

<b>CO1:</b>	be familiar with the level of conceptual development.
<b>CO2 :</b>	get acquainted to various ideas regarding technology change.
<b>CO3:</b>	be familiar with the current relevance of Mahatma Gandhi's thoughts in the present times.
<b>CO4:</b>	be familiar with the sociology of values.
<b>CO5:</b>	understand the impact of modernity over tradition.

### **Course VI: MEHTODS OF SOCIAL RESEARCH:**

After successful completion of the Course, a student will be able to:

<b>CO1:</b>	understand the need for social research and the scientific method.
<b>CO2 :</b>	be familiar with the methodology of social research.
<b>CO3:</b>	understand the stages of social research.
<b>CO4:</b>	understand the importance of the hypothesis research design.
<b>CO5:</b>	student will understand the utility of statistics in sociology.



**PROGRAMME SPECIFIC OUTCOMES (PSO) For B.A. Programme: B.A. Three Year  
Programme with History as an Optional Subject**

<b>Sr. No.</b>	<b>On completing B.A. with History, the student would have:</b>
<b>PSO 1</b>	availed the knowledge of our society, glorious past, economy and administrative tactics.
<b>PSO 2</b>	availed the knowledge of historical monuments, and literature.
<b>PSO 3</b>	acquired knowledge of important personalities, leaders and statesmen.
<b>PSO 4</b>	acquired knowledge of Indian National Movement and social and religious movements.
<b>PSO 5</b>	developed interest for further studies in History for the purpose of research and Govt services.

**COURSE OUTCOMES (COS): B.A. Programme: B.A. Three Year Programme with History as  
an Optional Subject**

**Course I - HISTORY OF INDIA FROM EARLIEST TIMES TO 1200 A.D.**

**After completion of the Course, a student will be able to:**

<b>CO 1:</b>	have the fundamental knowledge of early Indian history the tools of studying ancient Indian history.
<b>CO 2:</b>	understand the salient features of Indus valley civilization
<b>CO 3:</b>	evaluate the features of Buddhism and Jainism
<b>CO 4:</b>	visualize the administration of Mauryas and the art and architecture of Mauryas
<b>CO 5:</b>	identify the administration of Guptas and their contribution to Nalanda University
<b>CO 6:</b>	examine the Arab conquest of Sindu and the battle of Tarain.
<b>CO 7:</b>	have knowledge about the processes of cultural development and regional variations.

**Course II: WESTERN WORLD (*MID-15TH CENTURY TO 1870*)**

After successful completion of this project, a student will be able to:

<b>CO 1:</b>	know about the beginning of modern era- Renaissance, decline of feudalism, Reformation etc.
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<b>CO 2:</b>	have knowledge on economic revolution of the Modern west, American Revolution, French Revolution
<b>CO 3:</b>	know about the age of Napoleon, restoration of Europe under the Congress of Vienna, after Napoleonic activities and Liberalism in England.
<b>CO 4:</b>	know about the existence of new nations like Italy and Germany.

### **Course III: HISTORY OF INDIA (FROM 1200 A.D TO 1739 A.D.)**

After successful completion of the Course, a student will be able to:

<b>CO 1:</b>	understand the foundation of the Delhi sultanate and the Sultanate administration. Students will be able to identify the major political developments in the History of India during the period between the twelfth and the seventeenth century.
<b>CO 2:</b>	have knowledge about sources of medieval Indian history, foundation of Delhi Sultanate.
<b>CO 3:</b>	recognise the Socio, economic and religious conditions under Vijayanagar Empire.
<b>CO 4:</b>	identify the condition of India under the Mughal Empire.
<b>CO 5:</b>	explain the Administration and art and architecture of Mughals.
<b>CO 6:</b>	analyse the rise of the Marathas and the contribution of Shivaji
<b>CO 7:</b>	know the Mughal polity, economy, trade, commerce, society and role of women.

### **Course IV: MAIN CURRENTS OF WORLD HISTORY from 1871 to 1945 A.D.**

After successful completion of the Course, a student will be able to:

<b>CO 1:</b>	acquire knowledge of imperialism and colonialism.
<b>CO 2:</b>	have an idea of third Republic of France.
<b>CO 3:</b>	have an idea of capitalism and ideological clashes between nations.
<b>CO 4:</b>	acquire knowledge of causes, results, and effects of first world war, Russian revolution, fascism in Italy, internal and foreign policy of Hitler and effects of World War II.

### **Course V: HISTORY OF INDIA from 1740 to 1857 A.D.**

After successful completion of the Course, a student will be able to:

<b>CO 1:</b>	The students will be able to trace the British colonial expansion in the political contexts of eighteenth-century India.
<b>CO 2:</b>	Gain knowledge of Political trends of mid-18th century establishment of East India Company in India.
<b>CO 3:</b>	Students acquire knowledge of growth of colonial Administration.
<b>CO 4:</b>	Students understand trends and nature of anti-British movement in India.

<b>CO 5:</b>	They will learn about the changes in society, politics, religion and economy during this period.
<b>CO 6:</b>	Gain knowledge of socio-religious movements, status of woman and theory of filtration.

### **Course VI: HISTORY OF INDIA From 1858 to 1945 A.D.**

After successful completion of the Course, a student will be able to:

<b>CO 1:</b>	have knowledge of the issues pertaining to the vast canvass of nationalist history so that the student at the undergraduate level is equipped to focus upon the core ideas of national movement in its contextuality.
<b>CO 2:</b>	have knowledge on the tendency of British exploitation and suppression of mass movement.
<b>CO 3:</b>	know India's quest for independence and nation building are interwoven script of history, debated most widely at global level with various angles.
<b>CO 4:</b>	know India's national movement has vast and divergent ideological base with inner contradictions.
<b>CO 5:</b>	acquire knowledge about the freedom struggle in India.
<b>CO 6:</b>	acquire knowledge of Indian agriculture, rise of modern Industry, socio-religious movements, Muslim reform movement etc.

**PROGRAMME SPECIFIC OUTCOMES (PSO) For B.A. Programme: B.A. Three Year  
Programme with Hindi literature as an optional Subject**

<b>PSO 1</b>	साहित्यिक आलोचनात्मक विवेक के विकास में उपयोगी।
<b>PSO 2</b>	उच्चतर शिक्षा प्राप्त करने में उपयोगी, मानविकी के अन्य विषयों की समझ प्राप्त करने में उपयोगी।

**COURSE OUTCOMES (COS): B.A. Programme: B.A. Three Year Programme with Hindi  
literature as an optional Subject**

<b>स्नातक प्रथम वर्ष:</b>	
<b>CO1</b>	मध्य काल के साहित्य और संस्कृति का ज्ञान। यह राष्ट्रीय गौरव की समझ विकसित करने में उपयोगी।
<b>CO2</b>	आधुनिक युग और गद्य की समझ की दृष्टि से महत्वपूर्ण।

<b>स्नातक: द्वितीय वर्ष:</b>	
<b>CO1</b>	आधुनिककाव्य—विवेक के विकास में सहयोगी।
<b>CO2</b>	भाषा और साहित्य के इतिहास का इससे सम्यक् ज्ञान प्राप्त हो सकता है।

<b>स्नातक: तृतीय वर्ष:</b>	
<b>CO1</b>	कामकाजी हिन्दी का ज्ञान जो रोज़गार की दृष्टि से उपयोगी है।
<b>CO2</b>	भाषा शैली के विकास में सहयोगी।
<b>CO3</b>	रंगकर्म के क्षेत्र में प्रवेश की दृष्टि से महत्वपूर्ण।

**PROGRAMME SPECIFIC OUTCOMES (PSO) For B.A. Programme: B.A. Three Year  
Programme with English Literature as an optional Subject**

<b>PSO 1</b>	acquired knowledge about the place of literature in human life and the pleasure of studying it.
<b>PSO 2</b>	learnt about the different literary genres like poetry, drama, fiction, prose etc. including the knowledge about various writers of English Literature and the characteristics of their writings vis-a-vis their Age and social backgrounds.
<b>PSO 3</b>	studied important texts in different genres of English literature and understood its various aspects, both thematic and technical.
<b>PSO 4</b>	acquired the skill to analyze, interpret and appreciate poetry, drama, fiction and prose writings of various authors.
<b>PSO 5</b>	developed an interest in further exploring the field of English literature through higher studies.

**COURSE OUTCOMES (COS): B.A. Programme: B.A. Three Year Programme with English  
Literature as an optional Subject**

**Course-I: Drama**

After successful completion of the Course, a student would have:	
<b>CO1</b>	developed an understanding of different aspects of drama and the theatre.
<b>CO2</b>	acquired the knowledge of different types of drama like Comedy, Tragedy, Tragi-Comedy, Farce, Melodrama etc.
<b>CO3</b>	acquainted himself/herself with the characteristics of Greek, Sanskrit, English American and modern Indian theatre.
<b>CO4</b>	learnt the dramatic techniques and elements of drama like plot, theme, character and spectacle.
<b>CO5</b>	developed interest in furthering the studies in the field

**Course-II: Poetry**

After successful completion of the Course, a student would have:	
<b>CO1</b>	understood the various aspects of poetry including the basics of Rasa theory.
<b>CO2</b>	developed analytical skills and innovative ways of thinking.
<b>CO3</b>	developed a taste to connect literature with Nature, environment, and humanity.
<b>CO4</b>	come across some major poets of English literature and acquired the ability to interest the texts and understand and appreciate the lyrical quality of the poems.

<b>CO5</b>	understood different genres and the distinctive features of English, American and Indian English poems.
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### **Course-III: Fiction**

After successful completion of the Course, a student would have:	
<b>CO1</b>	acquired the fundamentals of Fiction as a genre of literature including its various aspects such as plot, narration, characterization etc.
<b>CO2</b>	got the background of the history of English fiction from the time of its emergence as a literary genre.
<b>CO3</b>	acquainted himself/herself with some of the important fiction writers of English literature.
<b>CO4</b>	come across various kinds of novels like epistolary novel, picaresque novel, psychological novel, historical novel etc
<b>CO5</b>	generated interest in doing further studies in the genre.

### **Course-IV: Drama**

After successful completion of the Course, a student would have:	
<b>CO1</b>	learnt about the development of English drama from early times to the present day.
<b>CO2</b>	acquired the knowledge of various aspects of drama as a genre in literature and how it is different from other narrative literatures.
<b>CO3</b>	learnt about the various stages of dramatic presentation, Acts, Scenes etc.
<b>CO4</b>	studied the dramatic texts of some of the major dramatists of English.
<b>CO5</b>	acquired a critical understanding of social and cultural contexts through the study of dramatists and their works
<b>CO6</b>	generated an interest in further study of the genre.

### **Course-V: Fiction**

After successfully completing the course in fiction, the students will be able to:	
<b>CO1</b>	understand literature of contemporary period and relate with the important trends of the period.
<b>CO2</b>	become aware of the various forms of fiction and different authors.
<b>CO3</b>	become familiarized with various narrative forms.
<b>CO4</b>	improve their critical faculty and imagination through long and short fiction and get familiarized with characterization, plot and construction etc.
<b>CO5</b>	develop further interest in studying in fiction and its various aspects.

## Course- VI: Poetry

After successfully completing the course in fiction, the students will be able to:	
<b>CO1</b>	acquaint themselves with the history of English poetry, different types of poems, stanza forms and figures of speech.
<b>CO2</b>	gain ability to comprehend and appreciate various kinds of poetry from Victorian to Modern period.
<b>CO3</b>	become familiar with different ages poets, their poetry and their themes.
<b>CO4</b>	learn to connect emotional as well as the stylistic aspect of poetry.
<b>CO5</b>	generate self-interest for higher studies

# **BACHELOR OF COMMERCE (B.COM)**

## **PROGRAMME OUTCOMES**

<b>Accountancy, Management, Economics</b>	<p>After graduation a student will be able to</p> <p><b>PO:1</b> Disciplinary knowledge: Capable of demonstrating comprehensive knowledge and understanding of one or more disciplines that form a part of an undergraduate programme of study.</p> <p><b>PO:2</b> Communication Skills: Ability to express thoughts and ideas effectively in writing and orally; Communicate with others using appropriate media; confidently share one's views and express herself/himself; demonstrate the ability to listen carefully, read and write analytically, and present complex information in a clear and concise manner to different groups.</p> <p><b>PO:3</b> Critical thinking: Capability to apply analytic thought to a body of knowledge; analyse and evaluate evidence, arguments, claims, beliefs on the basis of empirical evidence; identify relevant assumptions or implications; formulate coherent arguments; critically evaluate practices, policies and theories by following scientific approach to knowledge development.</p> <p><b>PO:4</b> Problem solving: Capacity to extrapolate from what one has learned and apply their competencies to solve different kinds of non-familiar problems, rather than replicate curriculum content knowledge; and apply one's learning to real life situations.</p> <p><b>PO:5</b> Analytical reasoning: Ability to evaluate the reliability and relevance of evidence; identify logical flaws and holes in the arguments of others; analyse and synthesize data from a variety of sources; draw valid conclusions and support them with evidence and examples and addressing opposing viewpoints.</p> <p><b>PO:6</b> Research-related skills: A sense of inquiry and capability for asking relevant/appropriate questions, problematizing, synthesizing, and articulating; Ability to recognize cause-and-effect relationships, define problems, formulate hypotheses, test hypotheses, analyze, interpret and draw conclusions from data, establish hypotheses, predict cause-and-effect relationships; ability to plan, execute and report the results of an experiment or investigation.</p> <p><b>PO:7</b> Cooperation/Team work: Ability to work effectively and respectfully with diverse teams; facilitate cooperative or coordinated effort on the part of a group, and act together as a group or a team in the interests of a common cause and work efficiently as a member of a team.</p> <p><b>PO:8</b> Scientific reasoning: Ability to analyze, interpret and draw conclusions from quantitative/qualitative data; and critically evaluate ideas, evidence, and experiences from an open-minded and reasoned perspective.</p>
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**PO:9** Reflective thinking: Critical sensibility to lived experiences, with self-awareness and reflexivity of both self and society.

**PO:10** Information/digital literacy: Capability to use ICT in a variety of learning situations, demonstrate ability to access, evaluate, and use a variety of relevant information sources; and use appropriate software for analysis of data.

**PO:11** Self-directed learning: Ability to work independently, identify appropriate resources required for a project, and manage a project through to completion. Multicultural competence: Possess knowledge of the values and beliefs of multiple cultures and a global perspective; and capability to effectively engage in a multicultural society and interact respectfully with diverse groups.

**PO:12** Moral and ethical awareness/reasoning: Ability to embrace moral/ethical values in conducting one's life, formulate a position/argument about an ethical issue from multiple perspectives, and use ethical practices in all work. Capable of demonstrating the ability to identify ethical issues related to one's work avoid unethical behaviour such as fabrication, falsification or misrepresentation of data or committing plagiarism, not adhering to intellectual property rights; appreciating environmental and sustainability issues; and adopting objective, unbiased and truthful actions in all aspects of work.

**PO:13** Leadership readiness/qualities: Capability for mapping out the tasks of a team or an organization, and setting direction, formulating an inspiring vision, building a team who can help achieve the vision, motivating and inspiring team members to engage with that vision, and using management skills to guide people to the right destination, in a smooth and efficient way.

**PO:14** Lifelong learning: Ability to acquire knowledge and skills, including, learning how to learn", that are necessary for participating in learning activities throughout life, through self-paced and self-directed learning aimed at personal development, meeting economic, social and cultural objectives, and adapting to changing trades and demands of workplace through knowledge/skill development/reskilling.

**PO:15** understand the importance and relevance of the subjects

**PO:16** understand the basic principles of accounting and its procedures

**PO:17** understand and explain the importance of book-keeping systems using the double-entry system in corporate accounting.

**PO:18** understand the difference between single entry and double entry system.

**PO:19** understand the basic principles of corporate governance.

**PO:20** understand the statutes concerning and affecting business organizations.

**PO:21** understand the basic principles of business economics both at macro and micro levels.

**PO:22** understand the basic theories of financial management.

## **PROGRAMME SPECIFIC OUTCOMES AND COURSE OUTCOME**

### **PROGRAMME SPECIFIC OUTCOMES (PSO) For B.Com. Programme**

<b>Sr. No.</b>	<b>Students graduating with the B. Com degree should be able to:</b>
<b>PSO 1</b>	gain thorough basic knowledge in the fundamental of Commerce and Accounting.
<b>PSO 2</b>	understand the application of knowledge of commerce in business service sector industry, marketing, finance, entrepreneurship development.
<b>PSO 3</b>	become industry ready and develop various managerial and accounting skills for better professional opportunities.
<b>PSO 4</b>	build confidence and develop communication skills to face the challenges of the corporate world.
<b>PSO 5</b>	become responsible citizens as various academic and co-curricular courses imbibe sensitivity, moral and ethical values among them.
<b>PSO 6</b>	acquire the skills like effective communication, decision making, problem solving in day-to-day business affairs.
<b>PSO 7</b>	can get skills regarding various aspects like Marketing Manager, Selling Manager, overall Administration abilities of the Company.
<b>PSO 8</b>	enter master programmes like M. Com, MBA and pursue professional programmes like C.A, CMA, C.S, etc.

### **COURSE OUTCOMES (COS): For B.Com. Programme**

#### **Course I: Financial Accounting**

**Upon the Completion of the course, the student will be able to :**

<b>CO1 :</b>	prepare Journals, Subdivision of Journal, Preparation of Ledger and Trial Balance and Final Accounts with Adjustments
<b>CO2 :</b>	demonstrate accounting standard - 6 and 10, and prepare Branch Accounts, Departmental Account, Accounting for Depreciation
<b>CO3 :</b>	prepare Royalty Accounts, Accounting of Non-Profit Making Organization
<b>CO4 :</b>	prepare Joint Venture Account's, Consignment, and Investment Account
<b>CO5 :</b>	understand preparation of Partnership Accounts

#### **Course II: Business Mathematics**

**Upon the Completion of the course, the student will be able to :**

<b>CO1</b>	solve and calculate Gaining and Sacrificing Ratio, Proportion, Percentage, Commission, Discount and Brokerage.
<b>CO2</b>	solve Simultaneous Equations problems and also able to Prepare of Invoice.
<b>CO3</b>	solve problems of Elementary Matrices
<b>CO4</b>	solve Logarithms and Anti - logarithms problems and also able to calculate simple and Compound Interest.
<b>CO5</b>	calculate Averages — Simple, Weighted and Statistical Averages Arithmetic mean, Harmonic mean, Geometric mean. Profit and Loss

### **Course III :- Business Organization and Communication**

Upon the Completion of the course , the student will be able to :

<b>CO1:</b>	know various Forms of Business Organization and Detailed Study of Sole Proprietorship and Partnership.
<b>CO2:</b>	know process of Formation of Private and Public Company, types of Companies Cooperative Organisation ,Public Enterprises
<b>CO3:</b>	to demonstrate his verbal and non-verbal communication ability through presentations.
<b>CO4:</b>	to demonstrate his verbal and non-verbal communication ability through presentations.
<b>CO5:</b>	to draft effective business correspondence with brevity and clarity.
<b>CO6:</b>	to participate in an online learning environment successfully

### **Course IV : Micro Economic**

Upon the Completion of the course , the student will be able to :

<b>CO1:</b>	differentiate between Microeconomics and Macroeconomics
<b>CO2:</b>	demonstrate the law of demand and how equilibrium price and quantity are Determined
<b>CO3:</b>	demonstrate the measurement of demand and supply sensitivity or elasticity relative to changes in price, income, and price of substitute goods
<b>CO4:</b>	identify the factors of production and production possibilities
<b>CO5:</b>	explain the relationship between firms, industries and markets
<b>CO6:</b>	distinguish between the features of the four market structures; monopoly, oligopoly, monopolistic and perfect competition
<b>CO7:</b>	demonstrate how firms in the four market structures determine their price, output and profit maximization

### **Course IV: Macro Economics**

Upon the Completion of the course, the student will be able to:

<b>CO1:</b>	get an overview of the major developments in macroeconomic theory,with particular emphasis on the policy prescriptions of the earlier macroeconomic schools of thought.
<b>CO2 :</b>	demonstrate the Methods for measuring National Income in India and its Problems.
<b>CO3:</b>	explain Theories of Wages, Interest and Employment.

<b>CO4:</b>	understand second half that includes the Monetary Theory expositions by Sir John Hicks, an understanding of Money and the Classical and Keynesian definitions and motives for holding money, also understand a theoretical base on the evolution of money and deeper insights into the utility of money in different macroeconomic frameworks.
<b>CO5:</b>	explain the relationship between firms, industries and markets, distinguish between the features of the four market structures; monopoly, oligopoly, monopolistic and perfect competition and demonstrate how firms in the four market structures determine their price, output and profit maximization

### **Course VI: Fcs & PC Software**

**Upon the Completion of the course, the student will be able to:**

<b>CO1:</b>	describe various types of software: System software, Application software. System software: Operating system
<b>CO2:</b>	understand various types of operating systems like Single user, Multi-user, Real time, Time sharing and Batch processing, Multiprocessing, Multiprogramming, Multitasking, Distributed processing
<b>CO3:</b>	acquire Complete knowledge of MS- Word
<b>CO4:</b>	understand the importance of Decision support system, limitation, Characteristics of DSS, Decision Support and Structure of Decisions
<b>CO5:</b>	explain Internet protocols, TCP/IP, FTP, I-ITT, URL.

### **Course VII : DTP**

Upon the Completion of the course, the student will be able to :

<b>CO1:</b>	explain importance and Advantages of DT, DTP Software and Hardware
<b>CO2 :</b>	demonstrate different types of Graphics,
<b>CO3:</b>	understand Versions of PageMaker and Create a New Page
<b>CO4:</b>	proper understanding of Multimedia Elements;
<b>CO5:</b>	demonstrate usefulness of MultimediaSoftware Tools.

### **Course VIII: Income Tax**

**Upon the Completion of the course, the student will be able to :**

<b>CO1:</b>	explain Role of taxes in Indian economy and Direct Taxes in India
<b>CO2 :</b>	demonstrate Contribution of Income Tax in public revenue.
<b>CO3:</b>	compute of taxable income of salaried persons
<b>CO4:</b>	compute of taxable income from house property

<b>CO5:</b>	compute Capital gains — Short term & long-term capital and also compute income from other sources.
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### **Course IX: Goods and Service Tax I**

**Upon the Completion of the course, the student will be able to :**

<b>CO1:</b>	explain Important terms and definitions of goods and service Tax (GST),
<b>CO2:</b>	explain Levy and Collection of Tax and Registration under GST.
<b>CO3:</b>	compute of value of taxable supply. Preparation of tax invoice- rules, proforma and practical problems.
<b>CO4:</b>	demonstrate Rate of tax on Composition levy and rules regarding return
<b>CO5:</b>	demonstrate Rules, Provisions and procedure regarding Input tax credit

### **Course X: Corporate Accounting**

**Upon the Completion of the course, the student will be able to :**

<b>CO1:</b>	prepare the final accounts of Joint Stock companies and Account for the various adjustments related to share capital and understand the regulatory environment in which the companies are formed and operate
<b>CO2:</b>	demonstrate the Methods of Valuation of Goodwill and Shares also able to prepare Accounts of Public Utility Companies (Electricity Company).
<b>CO3:</b>	prepare Consolidated Balance Sheet of a holding company with one subsidiary company and Accounting for liquidation of companies
<b>CO4:</b>	prepare the accounts of companies on the event of internal reconstruction
<b>CO5:</b>	prepare Accounts of Banking Companies and Accounts of Insurance Companies with Claim Settlements.

### **Course XI: Cost Accounting**

**Upon the Completion of the course , the student will be able to :**

<b>CO1:</b>	understand various costing systems and management system and Analyse & provide recommendations to improve the operations of organizations through the application of Cost accounting techniques
<b>CO2:</b>	differentiate methods of schedule costs as per unit of production
<b>CO3:</b>	prepare Consolidated Balance Sheet of a holding company with one subsidiary company and Accounting for liquidation of companies
<b>CO4:</b>	demonstrate Process Costing (Including Inter process profit and Reserve) and Reconciliation of Cost and Financial Accounts
<b>CO5:</b>	analyze cost-volume-profit techniques to determine optimal managerial decisions.

## **Course XII: Principles of Statistics**

**Upon the Completion of the course, the student will be able to:**

<b>CO1:</b>	organize, manage, and present data. And analyse statistical data graphical using frequency distributions and cumulative frequency distributions
<b>CO2 :</b>	demonstrate understanding and computation of measures of central tendencies i.e mean, median, mode of data sets.
<b>CO3:</b>	demonstrate understanding and computation of measures of dispersion i.e., range and standard deviation of data sets.
<b>CO4:</b>	demonstrate Types and Degree of Correlation, Methods of Correlation and Regression
<b>CO5:</b>	compute Index Number and Construct of Index Numbers

## **Course XIII: Principles of Management**

**Upon the Completion of the course, the student will be able to:**

<b>CO1:</b>	know about the evolution of Management, the functions and principles of management and have clear understanding of managerial functions like planning, and have same basic knowledge on international aspect of management
<b>CO2:</b>	understand the planning process in the organization and forecasting techniques.
<b>CO3:</b>	understand the concept of organization and also able to demonstrate the application of the principles in an organization
<b>CO4:</b>	demonstrate the ability to directing, leadership and communicate effectively
<b>CO5:</b>	understand the system and process of effective controlling in the organization.

## **Course XIV: Indian Company Act**

**Upon the Completion of the course, the student will be able to :**

<b>CO1:</b>	understand the various steps and requirements of Formation of Company, Promotion, Incorporation and Commencement of Business.
<b>CO2:</b>	understand various clauses associated with Memorandum of Association, Article of Association and Prospectus.
<b>CO3:</b>	understand the concept and types of shares and debentures.
<b>CO4:</b>	demonstrate the duties and liabilities of Managing Directors, Whole time Director and Their qualifications, Appointment, Powers, Duties and Liabilities.
<b>CO5:</b>	understand the Majority Powers and Minority rights, process of Prevention of oppression and mismanagement and methods of Winding -up of companies

## **Course XV: Banking & Insurance**

**Upon the Completion of the course, the student will be able to :**

<b>CO1:</b>	study Indian Banking System - its Features, Classification of Banking Institutions. Reserve Bank of India - Functions, Control of Credit by RBI, Powers of RBI.
<b>CO2 :</b>	understand Management of Deposits and Advances, Lending, Investment Management Practice, and Procedure of E - Banking
<b>CO3:</b>	get complete understanding of Functions and Principles of Insurance.
<b>CO4:</b>	get complete understanding of various conditions of Life insurance policies and procedure of Settlement of life Insurance Claims.
<b>CO5:</b>	study of Organization of General Insurance Corporation and its Subsidiary Companies

## **Course XVI: Income Tax Procedure and practice**

**Upon the Completion of the course, the student will be able to :**

<b>CO1:</b>	compute Gross Total Income
<b>CO2:</b>	compute total income and tax liability of individual assesses.
<b>CO3:</b>	calculate Total income and tax liability of Hindu undivided family and partnership firm.
<b>CO4:</b>	calculate total income of a company
<b>CO5:</b>	demonstrate Compulsory obligation and procedure to get permanent account number (PAN). Provisions and rules relating to preparation of income tax return.

## **Course XVII: Goods and Service Tax II**

**Upon the Completion of the course, the student will be able to:**

<b>CO1:</b>	create and prepare tax invoice
<b>CO2 :</b>	demonstrate provisions relating to interest and refund.
<b>CO3:</b>	furnish returns: Monthly Return, Quarterly return (In Case of Composition), Annual return.
<b>CO4:</b>	demonstrate Special provisions relating to Job Work. Process for reverse charge mechanism.
<b>CO5:</b>	demonstrate Procedure and types of Assessment.

## **Course XVIII: Income Tax Law & Practice**

**Upon the Completion of the course, the student will be able to:**

<b>CO1:</b>	describe the Basic Concepts: Income, Agriculture Income, Casual Income, Previous Year, Assessment Year, Gross Total Income, Total Income, Person Assessed, Residential Status and Tax Liability, Exempted Income.
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<b>CO2:</b>	understand Management of Deposits and Advances, Lending, Investment Management Practice, and Procedure of E - Banking
<b>CO3:</b>	compute the income from capital gains of an individual. Prepare the statement showing computation of income from other sources of an individual and distinguish between long term and short-term capital gains.
<b>CO4:</b>	describe the rules applicable in clubbing and aggregation of income and identify the order of set off of losses. Discuss the deductions applicable to individuals under Chapter VI A of the Income Tax Act. Compute Gross Total Income, Total Income and the tax liability of an individual.
<b>CO5:</b>	explain the powers and functions of income tax authorities, summarize the different types of assessment, identify the different types of return. Recall about Tax Planning and Tax management

### **Course 18: Goods and Service Tax & Custom Duty**

**Upon the Completion of the course, the student will be able to:**

<b>CO1:</b>	distinguish the earlier indirect tax system and present indirect tax system,
<b>CO2 :</b>	explain various Appellate Authorities under GST regime and its powers
<b>CO3:</b>	explain the structure of GST
<b>CO4:</b>	analyze the benefits of GST,
<b>CO5:</b>	describe the functions, powers and structure of GST Council and GSTN
<b>CO6:</b>	define basic concepts and terms under CGST Act and IGST Act
<b>CO7:</b>	explain the provisions of levy and collection of GSTS
<b>CO8:</b>	describe the provisions of Reverse Charge Mechanism and composition scheme of levy
<b>CO9:</b>	explain the concept of time, place, and value of supply
<b>CO10:</b>	explain importance and benefits of Input Tax Credit
<b>CO11:</b>	describe the provisions, types, and procedures of Registration,
<b>CO12:</b>	outline the provisions concerned with payment of Tax, interest, IDS, TCS, Refund and returns
<b>CO13:</b>	explain various types of Assessment under CGST Act
<b>CO14:</b>	describe various exemptions under GST, Demand, and recovery under GST Miscellaneous provisions under GST
<b>CO15:</b>	describe Levy and Collection of IGST, provisions of Audit, Search & Seizure

### **Course XIX: Management Accounting**

**Upon the Completion of the course, the student will be able to:**

<b>CO1:</b>	explain the application of management accounting and the various Tools and techniques of management accounting.
<b>CO2:</b>	analyse the financial statement using various ratios.
<b>CO3:</b>	prepare Fund Flow Statement and Cash Flow Statement.
<b>CO4:</b>	describe Marginal and differential costing as tool for decision making make or buy, change of product mix, Pricing, Break even analysis,
<b>CO5:</b>	explore new markets, Shutdown decisions of Production.



<b>CO6:</b>	prepare different budgets for the business.
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## **Course 20: Auditing**

**Upon the Completion of the course, the student will be able to:**

<b>CO1:</b>	demonstrate an understanding of the nature and scope of auditing and related services.
<b>CO2:</b>	describe and discuss the regulatory framework of auditing and related services
<b>CO3:</b>	show understanding and explain the ethical standards of an auditor.
<b>CO4:</b>	explain the stages of an audit and methods of gathering audit evidence
<b>CO5:</b>	show understanding and be able to interpret different types of audit report"
<b>CO6:</b>	describe and discuss the Internal Check System: Routine Checking, Internal Checking, Internal Audit and Test Checking
<b>CO7:</b>	demonstrate Vouching, Verification of Assets and Liabilities
<b>CO8:</b>	explain the process of Appointment of auditor, Powers, Duties and Liabilities.
<b>CO9:</b>	describe Special Audit of Banking Companies, Educational, Non-Profit Institutions and Insurance Companies.

## **Course XXI: Principles of Marketing**

**Upon the Completion of the course, the student will be able to:**

<b>CO1:</b>	demonstrate understanding of the strategic marketing environment
<b>CO2:</b>	develop marketing plans including marketing mix
<b>CO3:</b>	develop framework for the promotional mix as a part of the overall marketing mix
<b>CO4:</b>	successfully identify viable segmentation and targeting approaches for markets
<b>CO5:</b>	demonstrate understanding of research approaches and basic research tools as applied to marketing
<b>CO6:</b>	successfully identify different phases of Product life cycle concept.
<b>CO7:</b>	demonstrate understanding of the role of marketing intermediaries in introducing products to market

## **Course XXI: International Marketing**

**Upon the Completion of the course, the student will be able to:**

<b>CO1:</b>	develop marketing plans relating to Entry in the Foreign Market.
<b>CO2:</b>	demonstrate understanding of Product Planning for International Market, Product designing, Advertising, Branding and Packaging
<b>CO3:</b>	successfully identify different Factors Influencing International Price
<b>CO4:</b>	demonstrate understanding of the role of International Distribution Channels
<b>CO5:</b>	demonstrate understanding of the Steps of Commencement of an Export Business

### **Course XXIII: Web Designing**

Upon the Completion of the course, the student will be able to :

<b>C01:</b>	design web pages
<b>C02:</b>	edit a web page
<b>C03:</b>	design web page using different tools like NetBeans and Dreamweaver
<b>C04:</b>	frames and tables, animation effects, creating forms, Images
<b>C05:</b>	create and edit cascading style sheets

### **Course XXIV: Digital Marketing**

Upon the Completion of the course, the student will be able to:

<b>C01:</b>	understand the Marketing Process, increasing Visibility, Types of visibility,
<b>C02:</b>	understand Internet and difference between Internet & Web,
<b>C03:</b>	understand Google Analytics also able to set up Analytics account,
<b>C04:</b>	demonstrate Marketing on Social networking websites,
<b>C05:</b>	explain SEO and its importance, Google AdWords overview

### **Course 25: Central and Provincial Taxes**

Upon the Completion of the course, the student will be able to:

<b>C01:</b>	understanding nature of custom duty
<b>C02:</b>	explainuses of assessable value for customs
<b>C03:</b>	understand study of Madhya Pradesh excise duty act
<b>C04:</b>	understands of main professional tax
<b>C05:</b>	demonstrate uses and importance of css : creating and editing cascading styles sheets

### **Course 26: Tax Planning and Management**

Upon the Completion of the course, the student will be able to:

<b>C01:</b>	acquire working knowledge regarding legitimate way of tax planning under different financial/ managerial decisions after taking into consideration the impact of Direct Tax Laws.
<b>C02:</b>	understand Concept of Tax Planning
<b>C03:</b>	demonstrate different Areas of Tax Planning:
<b>C04:</b>	distinguish between Tax Planning and Tax Management
<b>C05:</b>	demonstrateTax Planning and Financial Decisions

## **BACHELOR OF SCIENCE (B.Sc.)**

### **PROGRAMME OUTCOMES**

<a href="#">Chemistry</a> <a href="#">Mathematics</a> <a href="#">Physics</a> <a href="#">Botany</a> <a href="#">Zoology</a> <a href="#">Microbiology</a> <a href="#">Computer Science</a>	<p>After graduation a student will be able to</p> <p><b>PO:1</b> Disciplinary knowledge: Capable of demonstrating comprehensive knowledge and understanding of one or more disciplines that form a part of an undergraduate programme of study.</p> <p><b>PO:2</b> Communication Skills: Ability to express thoughts and ideas effectively in writing and orally; Communicate with others using appropriate media; confidently share one's views and express herself/himself; demonstrate the ability to listen carefully, read and write analytically, and present complex information in a clear and concise manner to different groups.</p> <p><b>PO:3</b> Critical thinking: Capability to apply analytic thought to a body of knowledge; analyse and evaluate evidence, arguments, claims, beliefs on the basis of empirical evidence; identify relevant assumptions or implications; formulate coherent arguments; critically evaluate practices, policies and theories by following scientific approach to knowledge development.</p> <p><b>PO:4</b> Problem solving: Capacity to extrapolate from what one has learned and apply their competencies to solve different kinds of non-familiar problems, rather than replicate curriculum content knowledge; and apply one's learning to real life situations.</p> <p><b>PO:5</b> Analytical reasoning: Ability to evaluate the reliability and relevance of evidence; identify logical flaws and holes in the arguments of others; analyse and synthesize data from a variety of sources; draw valid conclusions and support them with evidence and examples and addressing opposing viewpoints.</p> <p><b>PO:6</b> Research-related skills: A sense of inquiry and capability for asking relevant/appropriate questions, problematizing, synthesizing, and articulating; Ability to recognize cause-and-effect relationships, define problems, formulate hypotheses, test hypotheses, analyze, interpret and draw conclusions from data, establish hypotheses, predict cause-and-effect relationships; ability to plan, execute and report the results of an experiment or investigation.</p> <p><b>PO:7</b> Cooperation/Teamwork: Ability to work effectively and respectfully with diverse teams; facilitate cooperative or coordinated effort on the part of a group, and act together as a group or a team in the interests of a common cause and work efficiently as a member of a team.</p> <p><b>PO:8</b> Scientific reasoning: Ability to analyze, interpret and draw conclusions from quantitative/qualitative data; and critically evaluate</p>
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ideas, evidence, and experiences from an open-minded and reasoned perspective.

**PO:9** Reflective thinking: Critical sensibility to lived experiences, with self-awareness and reflexivity of both self and society.

**PO:10** Information/digital literacy: Capability to use ICT in a variety of learning situations, demonstrate ability to access, evaluate, and use a variety of relevant information sources; and use appropriate software for analysis of data.

**PO:11** Self-directed learning: Ability to work independently, identify appropriate resources required for a project, and manage a project through to completion. Multicultural competence: Possess knowledge of the values and beliefs of multiple cultures and a global perspective; and capability to effectively engage in a multicultural society and interact respectfully with diverse groups.

**PO:12** Moral and ethical awareness/reasoning: Ability to embrace moral/ethical values in conducting one's life, formulate a position/argument about an ethical issue from multiple perspectives, and use ethical practices in all work. Capable of demonstrating the ability to identify ethical issues related to one's work avoid unethical behavior such as fabrication, falsification or misrepresentation of data or committing plagiarism, not adhering to intellectual property rights; appreciating environmental and sustainability issues; and adopting objective, unbiased and truthful actions in all aspects of work.

**PO:13** Leadership readiness/qualities: Capability for mapping out the tasks of a team or an organization, and setting direction, formulating an inspiring vision, building a team who can help achieve the vision, motivating and inspiring team members to engage with that vision, and using management skills to guide people to the right destination, in a smooth and efficient way.

**PO:14** Lifelong learning: Ability to acquire knowledge and skills, including, learning how to learn", that are necessary for participating in learning activities throughout life, through self-paced and self-directed learning aimed at personal development, meeting economic, social, and cultural objectives, and adapting to changing trades and demands of workplace through knowledge / skill development / reskilling.

**PO:15** understand the basic principles of the respective subjects and their relation to other sciences.

**PO:16** understand the scope & importance of the respective subjects.

**PO:17** create awareness on resources and their importance in the respective fields.

**PO:18** develop scientific temper and promote undertaking scientific

	<p>projects.</p> <p><b>PO:19</b> solve complex and diverse problems by recognizing and applying relevant universal laws relevant to the problem, applying the correct and relevant techniques using experimental/computational techniques.</p> <p><b>PO:20</b> Use the appropriate data/tools and assess and analyze the information.</p>
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## PROGRAMME SPECIFIC OUTCOMES AND COURSE OUTCOME

**PROGRAMME SPECIFIC OUTCOMES (PSO) For B.Sc. Programme: B.Sc. III Year  
Programme with Chemistry as an optional subject in PCM group and as a Compulsory subject  
in Bio Group.**

**After completion of degree, the students should have:**

<b>PSO1</b>	gained the theoretical as well as practical knowledge of handling chemicals.
<b>PSO2</b>	gained knowledge about available opportunities related to chemistry in the government services through public service commission particularly in the field of food safety, health inspector, pharmacist etc.
<b>PSO3</b>	acquired a broad foundation in the chemistry that stresses scientific reasoning and analytical problem solving with a molecular perspective.
<b>PSO4</b>	achieved the skills required to succeed in graduate school, professional school and the chemical industry like cement industries, agro product, Paint industries, rubber industries, petrochemical industries. Food processing industries, fertilizer industries etc. Got exposures of a breadth of experimental techniques using modern instrumentation.
<b>PSO5</b>	understood the importance of the elements in the periodic table including their physical and chemical nature and role in the daily life.
<b>PSO6</b>	understood the concept of chemistry interrelate and interact to the other subject like mathematics, physics, biological science etc. Learn the laboratory skills and safety to transfer and interpret knowledge entirely in the working environment

**COURSE OUTCOMES (COS): B.Sc. III Year Programme with Chemistry as an optional  
subject in PCM group and as a Compulsory subject in Bio Group.**

### Course-I Physical Chemistry

After successful completion of the Course a student will have the knowledge of:

<b>CO1</b>	the basic concepts of mathematics for chemist and detailed study of gaseous state and molecular velocities.
<b>CO2</b>	liquid and Solid state in detail.
<b>CO3</b>	the basics of chemical kinetics and mechanism of chemical kinetics.
<b>CO4</b>	the basics of radioactivity nuclear chemistry.
<b>CO5</b>	the concepts of Chemical Equilibrium and Colloidal solution

### Course-II Inorganic Chemistry

After successful completion of the Course a student will have the knowledge of:

<b>CO1</b>	various theories and principles related to atomic structure, Quantum numbers, Concepts of periodic properties.
<b>CO2</b>	various theories related to chemical bonding.
<b>CO3</b>	the basic concepts of Ionic solids, Weak interaction and Chemistry of Nobel gases.
<b>CO4</b>	the basic concepts of S Block element and P Block element Group 13 to 17.
<b>CO5</b>	Compounds of P block element like Boron, Fullerene.

### Course-III Organic Chemistry

After successful completion of the Course a student will be able to:

<b>CO1</b>	Acquire knowledge of the basic concept of structure and bonding, Mechanism of organic reaction, reactive intermediates.
<b>CO2</b>	Acquire knowledge of the basic concepts of alkenes and cyclo-alkanes, their classification, reaction and methods of preparation.
<b>CO3</b>	Learn the basic concepts of Alkenes, cyclo-alkenes and dienes. Their reaction and method of preparation.
<b>CO4</b>	Acquire knowledge about the basic concepts of Alkynes and alkyl Halides.
<b>CO5</b>	the factors responsible for reactivity of molecule and stereochemistry of organic compounds.

### Course-IV Physical Chemistry

After successful completion of the Course a student will be able to:

<b>CO1</b>	Learn basic concepts of Thermodynamics, various state function and thermo-chemistry.
<b>CO2</b>	Know in detail phase equilibrium, solid solution, liquid-liquid mixture and partial miscible liquids.
<b>CO3</b>	Acquire knowledge about the basic Concepts of electro chemistry and various theory of weak and strong electrolyte.
<b>CO4</b>	Know the types of electrodes, cells, Potentiometric and conductometric titration, buffers.
<b>CO5</b>	know the basic of surface chemistry and catalysis.

### Course-V Inorganic Chemistry

After successful completion of the Course a student should have:

CO1	Learnt chemistry of elements of First transition series.
CO2	Acquired knowledge on chemistry of second and third transition series.
CO3	Acquired knowledge on basic of coordination compound and oxidation and Reduction.
CO4	learnt the chemistry of lanthanide and actinides.
CO5	acquired knowledge about the basic of acid and bases and non-aqueous solvents

### Course-VI Organic Chemistry

After successful completion of the Course a should have:

CO1	acquired the knowledge about the basics of Ultraviolet/ electronic Spectroscopy.
CO2	known about Alcohols and phenols, their reaction types and method of preparation.
CO3	known in detail about aldehydes and ketones.
CO4	Known in detail about carboxylic acid and ethers.
CO5	known about compounds of nitrogen in detail.

### Course-VII Physical Chemistry

After successful completion of the Course a student should have learnt:

CO1	the elementaries of quantum mechanics and molecular Orbital Theory
CO2	the basics of spectroscopy vibrational and rotational spectroscopy.
CO3	known about Raman, electronic and UV spectroscopy.
CO4	acquired knowledge about the basics of Photochemistry
CO5	learnt Physical property and Molecular structure,

### Course-VIII Inorganic Chemistry

After successful completion of the Course a student should have:

CO1	acquired knowledge on Hard and Soft Acid and Bases, Silicone and Phoszenes.
CO2	acquired knowledge Metal Ligand Bonding in Transition Metal Complex, Thermodynamic and kinetic aspects of metal complexes.
CO3	acquired knowledge Magnetic property of transition metal complexes.
CO4	acquired knowledge electronic spectra of Transition metal Complexes, Organometallic chemistry.
CO5	acquired knowledge Bio Inorganic chemistry and Metal Nitrosyl complexes.

### Course- IX Organic Chemistry

After successful completion of the Course student will be able to:

CO1	learnt Basic of Nuclear magnetic Spectroscopy.
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<b>CO2</b>	acquired knowledge Organometallic compound, organo sulphur compound, Organic synthesis by enolates.
<b>CO3</b>	Basic of carbohydrates, Fats oil and detergents.
<b>CO4</b>	Acquired knowledge Amino acid, peptides, proteins and nucleic acid, synthetic dyes.
<b>CO5</b>	Acquired knowledge Basic of heterocyclic compound.



**PROGRAMME SPECIFIC OUTCOMES (PSO) For B.Sc. Programme: B.Sc. Three Year  
Programme with Mathematics as a Compulsory Subject in PCM Group**

<b>PSO1:</b>	<b>Solid Foundation in higher Mathematics:</b> Bachelor's Degree in mathematics is the culmination of in-depth knowledge of many core branches of mathematics, viz. Algebra, Calculus, Geometry, Differential Equations, Mechanics, Real and Complex Analysis including some related areas like Computer Science and Statistics. Thus, this programme helps students in building a solid foundation for further higher studies and research in Mathematics.
<b>PSO2:</b>	<b>Competency in Skills:</b> The skills and knowledge gained has intrinsic beauty, which leads to proficiency in analytical reasoning, critical understanding, analysis and synthesis in order to solve theoretical and practical problems. This can orient students towards applications of mathematics in other disciplines and moreover, can also be utilised in modelling and solving real life problems.
<b>PSO3:</b>	<b>Problem Solving:</b> Students undergoing this programme learn to logically question assertions, to recognize patterns and to distinguish between essential and irrelevant aspects of problems. This helps them to learn behave responsibly in a rapidly changing interdependent society.
<b>PSO4:</b>	<b>Interdisciplinary and Research Skills:</b> Students completing this programme will be able to present mathematics clearly and precisely, make vague ideas precise by formulating them in the language of mathematics, describe mathematical ideas from multiple perspectives and explain fundamental concepts of mathematics to non- mathematicians.
<b>PSO5:</b>	<b>Proficiency in Employments:</b> This programme will help students to enhance their employability for Government jobs, jobs in banking, insurance and investment sectors, data analysis jobs, and jobs in various other public and private enterprises.

**COURSE OUTCOMES (COS): B.Sc. Programme with Mathematics**

**Course I: ALGEBRA AND TRIGONOMETRY**

After completing the course, a student must be able to

<b>CO:1</b>	write the matrix representation of a set of linear equations and to analyses the solution of the system of equations and how to find the Eigen values and Eigen vectors which are used in various branches of engineering. How to apply linear independence of row and column matrix.
<b>CO:2</b>	test the consistency and inconsistency of system of equations.
<b>CO:3</b>	understand relation between root and coefficients of Polynomial. How to Transforms an equation. How to apply Descartes's rule of signs.

<b>CO:4</b>	understand statements, logical connectives, Logical equivalence, and algebra of proposition.
<b>CO:5</b>	understand the Logarithm of complex quantities and how to use Gregory's series summation of trigonometrical series.

### **Course – II: CALCULUS AND DIFFERENTIAL EQUATIONS:**

After completing the Course, a student must be able to

<b>CO:1</b>	understand the notion of successive differentiation, Maclaurin's, and Taylor series expansions of given functions and how to compute Asymptotes.
<b>CO:2</b>	draw the graph of some curves using curve tracing and understand the concept of curvature & calculate curvature of curve in Cartesian or polar form.
<b>CO:3</b>	know about transcendental functions & how to integrate them and Integration by reduction formula always helps to solve complex integration problems
<b>CO:4</b>	learn how to solve linear differential equations and reducible to equations in the linear form. Learn various techniques of getting exact solutions of first order linear differential equations and linear differential equations of higher degree.
<b>CO:5</b>	solve linear differential equation with constant coefficients and homo differential equation. Students able to transform equation by changing the dependent variable independent variable.

### **Course – III: PVECTOR ANALYSIS AND GEOMETRY:**

After completing the course, a student must be able to

<b>CO:1</b>	calculate the scalar & vector product of three and four vectors, find the gradient (Normal to the surface) of scalar function and find divergence and curl of vector field and prove identities involving them.
<b>CO:2</b>	interpret line, surface, and volume integrals, evaluate integrals by using Green's Theorem, Stokes theorem, Gauss's Theorem.
<b>CO:3</b>	know how to trace conics, graph the polar equations of conics and define conics in terms of a focus and a directrix
<b>CO:4</b>	learn how to find equation of cone with given base, understand condition for three mutually perpendicular generators, find the equation of right circular cone.
<b>CO:5</b>	get an idea of central conicoids, parabola, and plane section of coinoids and understands the concept of generating lines.

#### **Course IV: ABSTRACT ALGEBRA:**

After completing the course, a student must be able to

<b>CO:1</b>	understand Group, Subgroup, Cyclic group & its properties
<b>CO:2</b>	use Lagrange's theorem to determine information about the order of a subgroup of a group and powers of elements of a group, understand Fermat's theorem, explain the significance of the notions of cosets, normal subgroups, and Quotient groups.
<b>CO:3</b>	understand the concepts of Homomorphism and isomorphism of groups, define Permutation group and its subgroups, and understands Cayley's theorem and its application.
<b>CO:4</b>	understand the definition of group Automorphism, inner Automorphism, define Conjugacy relation and centraliser and understands Cauchy's theorem for finite abelian & non abelian groups.
<b>CO:5</b>	define Ring, subring & Ring homomorphism, understands Ideals and Quotient rings and Understands Integral domain and field.

#### **Course V: ADVANCED CALCULUS:**

After completing the course, the students must be able to:

<b>CO:1</b>	understand the notions of limit of a sequence, bounded and monotonic sequences, Cauchy's convergence criterion, understands the convergence of a series of real numbers by comparison test, Cauchy's Integral test, Cauchy's Root test, ratio tests, Raabe's tests, logarithmic tests.
<b>CO:2</b>	define continuity of functions of single variable and properties of continuous functions, understands sequential continuity, uniform continuity and understand the consequences of various mean value theorems for differentiable functions
<b>CO:3</b>	learn how to calculate the limit and examine the continuity of a function at a point, how to apply Taylor's theorem and define Jacobians.
<b>CO:4</b>	know what is maxima and minima of function? How to find maxima and minima of functions of two variables, derive relation between Beta and Gamma functions and evaluate integrals by using Beta and Gamma functions
<b>CO:5</b>	evaluate Line, Double and Triple integrals and change of variables in integral, apply double and triple integral to find Area, Volume, Total mass, Centre of gravity and Moment of inertia Understand to the Change the order of integration in double integral.

#### **Course VI: DIFFERENTIAL EQUATIONS:**

After completing the course students must be able to:

<b>CO:1</b>	find the series solution of differential equations for ordinary and regular singular points and know Bessel's and Legendre' functions and their properties.
<b>CO:2</b>	compute Laplace transforms using various properties, understands Existence theorem

	for Laplace transforms and differentiation and integration of transforms.
<b>CO:3</b>	understand Inverse Laplace transform and its properties, convolution theorem, Fourier transform and its application in various branches of engineering.
<b>CO:4</b>	learn how to form partial differential equation using various methods, solve Lagrange's PDE and find the solution of non-linear partial differential equations.
<b>CO:5</b>	classify partial differential equations, solve homogeneous and non-homogeneous equations with constant coefficient and learn various techniques to solve PDEs.

### **Course-VII: LINEAR ALGEBRA AND NUMERICAL ANALYSIS:**

After completing the course students must be able to:

<b>CO:1</b>	know about vector spaces, subspaces, sum and direct sum of subspaces, learn about LI and LD vectors, quotient spaces and FDVS and IDVS vectors.
<b>CO:2</b>	understand linear transformation, rank-nullity theorem and diagonalisation.
<b>CO:3</b>	define inner product space, understand Cauchy-Schwartz inequality, orthogonal vectors, and Gram-Schmidt orthogonalization process.
<b>CO:4</b>	learn how to solve algebraic & transcendental equation numerical methods, understand the concept of interpolation, and apply Newton-Cote's formula.
<b>CO:5</b>	understand various numerical methods to solve system of linear equations and solve differentiation, integration and ODE using numerical methods.

### **Course VIII REAL AND COMPLEX ANALYSIS:**

After completing the course students must be able to

<b>CO:1</b>	understand Riemann integral, the fundamental theorem of integral calculus, mean value theorem of integral calculus and Schwarz's and Young's theorem.
<b>CO:2</b>	test the convergence of Improper integrals using Comparison tests, Abel's and Dirichlet's tests, understand Continuity, derivability and Integrability of an integral of a function of a parameter.
<b>CO:3</b>	understand the concept of metric spaces and its properties.
<b>CO:4</b>	understand the concepts of continuity and differentiability of complex functions and evaluate integrals using Cauchy's theorem & Cauchy's Integral formula
<b>CO:5</b>	understand the concept of power series of analytic function, know about Taylor's, Laurent's series, singular points, and residues.

## Course IX: STATISTICAL METHODS

After completing the course students must be able to

<b>CO:1</b>	compute measure of central tendency and measures of dispersions, find moments about mean and about origin and understand skewness and kurtosis.
<b>CO:2</b>	understand the concept of probability, conditional probability, bayes theorem and calculate the expected value of an event.
<b>CO:3</b>	understand theoretical distribution, their properties and uses and find the probability using Binomial, Poisson distributions.
<b>CO:4</b>	understand curve fitting using correlation and regression.
<b>CO:5</b>	understand the concept of null and alternative hypothesis, t, F and Z statistics and their tests

**PROGRAMME SPECIFIC OUTCOMES (PSO) For B.Sc. Programme: B.Sc. Three Year  
Programme with Physics as a Compulsory Subject in PCM Group**

<b>Sr. No.</b>	<b>After successful completion of the Programme a student will be able to:</b>
<b>PSO 1</b>	demonstrate an understanding of the core theories & principles of physics, which includes mechanics, electromagnetism, thermodynamics, & quantum mechanics.
<b>PSO 2</b>	learn the Concepts as Quantum Mechanics, Relativity, introduced at degree level in order to understand nature at atomic levels.
<b>PSO 3</b>	provide knowledge about material properties and its application for developing technology to ease the problems related to the society.
<b>PSO 4</b>	understand the set of physical laws, describing the motion of bodies, under the influence of system of forces.
<b>PSO 5</b>	understand the relationship between particles & atom, as well as their creation & decay. Relate the structure of atoms & subatomic particles
<b>PSO 6</b>	understand physical properties of molecule, the chemical bonds between atom as well as molecular dynamics.

**COURSE OUTCOMES (COS): B.Sc. Programme with Physics**

**COURSE 1 – Mathematical Physics, Mechanics & General Properties of Matter**

<b>Sr. No.</b>	<b>On completing the course, the student will be able to:</b>
<b>CO 1</b>	differentiate between scalar and vector quantities.
<b>CO 2</b>	differentiation and integration of different variables
<b>CO 3</b>	do the applications of different theorems
<b>CO 4</b>	laws of motion and diff. types of forces.
<b>CO 5</b>	understand that how to determine different elastic constant and relation among them.

**COURSE 2 – Thermodynamics and Statistical Physics**

<b>Sr. No.</b>	<b>On completing the course, the student will be able to:</b>
<b>CO 1</b>	describe basic concepts of thermodynamics
<b>CO 2</b>	restate definition of system, equation of state, equilibrium, and equation of state
<b>CO 3</b>	to use 1 <sup>st</sup> and 2 <sup>nd</sup> law of thermodynamics. Students will be defined efficiency of carnot's engine
<b>CO 4</b>	the concepts of entropy and understand how to change the entropy of the universe in a reversible and irreversible process.
<b>CO 5</b>	understand the significance of statistical approach
<b>CO 6</b>	restate definition of microstates and Macro states of a system, Equilibrium states

**COURSE 3 – Optics and Laser Physics**

<b>Sr. No.</b>	<b>On completing the course, the student will be able to:</b>
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<b>CO 1</b>	differentiate between Reflection and Refraction.
<b>CO 2</b>	use multiple lenses in Rusden and Huygens eyepiece,
<b>CO 3</b>	understand the applications of Aplanatic points
<b>CO 4</b>	learn about the interference and its application.
<b>CO 5</b>	understand the Newton rings.

#### **COURSE 4 – Electrostatics, Magneto statics and Electrodynamics**

<b>Sr. No.</b>	<b>On completing the course, the student will be able to:</b>
<b>CO 1</b>	students will also be able to use Capacitors.
<b>CO 2</b>	the Dielectrics and also the applications of Gauss theorem, Claussius-Mossotti equation.
<b>CO 3</b>	the Biot and Savart law.
<b>CO 4</b>	magnetic Dipole moment.
<b>CO 5</b>	the Amperes law, Relation between B, H and M.
<b>CO 6</b>	understand that how to determine different circuit currents LCR, LR, CR
<b>CO 7</b>	determination of R.M.S. value of A.C.

#### **COURSE 5 – Quantum Mechanics and Spectroscopy**

<b>Sr. No.</b>	<b>On completing the course, the student will be able to:</b>
<b>CO 1</b>	know about the Optics phenomenon 1-Photoelectric effect, 2- Black body radiation, Compton effect
<b>CO 2</b>	understand the concepts of wave packets and concepts of phase and group velocity
<b>CO 3</b>	know about Rigid rotator.
<b>CO 4</b>	understand the concepts of Spectra
<b>CO 5</b>	students will demonstrate written and oral communication skills in communicating physics related topics.

#### **COURSE 6 – Solid State Physics, Semiconductor Devices & Nanoparticles**

<b>Sr. No.</b>	<b>On completing the course, the student will be able to:</b>
<b>CO 1</b>	understand Crystalline and amorphous solids
<b>CO 2</b>	know about Lattice and basis, Unit cell
<b>CO 3</b>	understand Kronig-Penny model
<b>CO 4</b>	know about LED, Solar cell, Photodiode
<b>CO 5</b>	understand the basic concepts of Nano materials

**PROGRAMME SPECIFIC OUTCOMES (PSO) For B.Sc. Programme: B.Sc. III Year  
Programme with Botany as a Compulsory subject in Bio Group.**

**After completion of degree, the students should have:**

<b>PSO1</b>	understood the scope and significance of the program.
<b>PSO2</b>	developed the skills to identify different types of plants.
<b>PSO3</b>	developed the skills to do laboratory work from different equipment.
<b>PSO4</b>	developed the skills related to scientific research in the area of Botany.
<b>PSO5</b>	learnt to describe the evolution, anatomy, morphology, systematic, genetics, physiology and ecology of plants, the ecological and evolutionary features of the flora and fauna in environment
<b>PSO6</b>	knowledge about identifying and analyzing scientific problems and environmental issues using oral and written communication skills about the outcomes of such analyses.

**COURSE OUTCOMES (COS): B.Sc. III Year Programme with Botany as a Compulsory subject  
in Bio Group.**

**Course –I : Diversity of Lower Plants**

**After completion of this Course, a student will be able to:**

<b>CO1:</b>	understand the diversity among Algae.
<b>CO2:</b>	know the systematic, morphology and structure, of Algae. Understand the life cycle pattern of Algae.
<b>CO3:</b>	understand the useful and harmful activities of Algae.
<b>CO4:</b>	understand the Biodiversity of Fungi
<b>CO5:</b>	know the Economic Importance of Fungi
<b>CO6:</b>	understand the morphological diversity of Bryophytes.
<b>CO7:</b>	understand the economic importance of the Bryophytes

**Course – II : Diversity of Higher plants**

**After successful completion of the Course, a student will be able to:**

<b>CO1:</b>	understand the morphological diversity of Bryophytes and Pteridophytes and Gymnosperms. 2. Understand the economic importance of the Bryophytes and Pteridophytes and Gymnosperms.
<b>CO2:</b>	know the evolution of Bryophytes and Pteridophytes and Gymnosperms.
<b>CO3:</b>	understand the habit of the angiosperm plant body.
<b>CO4:</b>	know the vegetative characteristics of the plant.
<b>CO5:</b>	learn about the reproductive characteristics of the plant.



<b>CO6:</b>	understand the plant morphology and basic taxonomy.
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### **Course III: Taxonomy and Embryology of Angiosperms**

**After successful completion of this course, students will be able to:**

<b>CO1:</b>	understand plant morphology
<b>CO2:</b>	understand the description of a plant specimen.
<b>CO3:</b>	identify at least 20 locally available families of flowering plants.
<b>CO4:</b>	identify genus and species of locally available wild plants.
<b>CO5:</b>	prepare of botanical keys at generic level by locating key characters.
<b>CO6:</b>	identify at least 10 medicinal plant species.

### **Course IV : Plant Ecology, Biodiversity and Phytogeography.**

**After successful completion of the Course, a student will be able to understand**

<b>CO1:</b>	understand the concept, principle and types of sterilization methods.
<b>CO2:</b>	know the concept and characteristics of antiseptic, disinfectant and their mode of action.
<b>CO3:</b>	know the cultivation methods of bacteria, yeast, fungi and virus
<b>CO4:</b>	know about Photosynthesis and Respiration in plants.
<b>CO5:</b>	understand the process of translocation of solutes in plants 5) Know the nitrogen metabolism and its importance.

### **Course V: Plant Physiology and Biochemistry.**

**After successful completion of the Course, a student will be able to :**

<b>CO1:</b>	understand the properties of Monosaccharides, Oligosaccharides and Polysaccharides.
<b>CO2:</b>	they will learn about the Significance of Carbohydrates.
<b>CO3:</b>	understand the Properties of saturated fatty acids, and unsaturated fatty acids.
<b>CO4:</b>	understand lipid metabolism in plants.
<b>CO5:</b>	understand the Beta Oxidation, Gluconeogenesis and its role in mobilization of fatty acids during germination.
<b>CO6 :</b>	understand the Significance of lipids

### **Course VI: Cell Biology, Genetics and Biotechnology**

**After successful completion of the Course, a student will be able to:**

<b>CO1:</b>	know about the genomic organization or living organisms, study of genes genome, chromosome etc.
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<b>C02:</b>	gain knowledge about the mechanism and essential component required for prokaryotic DNA replication.
<b>C03:</b>	understand the fundamentals of Recombinant DNA Technology.
<b>C04:</b>	know about the Genetic Engineering.
<b>C05:</b>	understand the principle and basic protocols for Plant Tissue Culture.
<b>C06:</b>	understand the concept of operon and its structure and regulation.

**PROGRAMME SPECIFIC OUTCOMES (PSO) For B.Sc. Programme: B.Sc. III Year**

**Programme with Zoology as an optional subject in Bio Group.**

**After completion of degree, the students should have:**

<b>PSO1</b>	To impart basic knowledge of faunal diversity & their pattern of evolution, morphological features, adaptation, and classification intended for a graduate
<b>PSO2</b>	To understand the basic concepts in taxonomy, cell biology, physiology, genetics, biochemistry, developmental biology, evolution, immunology
<b>PSO3</b>	To get acquainted with the theoretical as well as practical approaches of the subjects
<b>PSO4</b>	To inculcate interest in nature and its living creatures so as to understand their socio-economic and ecological importance
<b>PSO5</b>	To understand the significance of zoology in aquaculture, apiculture, vermiculture, animal & poultry farming, agricultural pest management, etc. so that getting themselves acquainted with the skills & knowledge relevant for the source of additional income and self-employment

**COURSE OUTCOMES (COS): B.Sc. III Year Programme with Zoology as an optional subject in Bio Group.**

<b>BSc Ist Year Paper – I Course: <i>Invertebrates</i></b>	
After successful completion of the course, students will be able to:	
<b>CO1</b>	understand zoological nomenclature and associated international codes.
<b>CO2</b>	understand classification of lower and higher invertebrates.
<b>CO3</b>	understand the morphology and affinities of invertebrates.
<b>CO4</b>	understand the life cycle and ecological significance of invertebrates.
<b>CO5</b>	understand the role of insects as vectors of human diseases.

<b>BSc Zoology Course II: <i>Cell Biology &amp; Developmental Biology</i></b>	
After successful completion of the course, students will be able to:	
<b>CO1</b>	understand the importance of cell as a structural and functional unit of life.
<b>CO2</b>	understand about the prokaryotic and eukaryotic cells system
<b>CO3</b>	understand how cell function
<b>CO4</b>	understand the significance of stem cells
<b>CO5</b>	understand the mechanism of fertilization and dynamics of embryonic development

<b>BSc Zoology Course III: <i>Practical Zoology</i></b>	
After successful completion of the course, students will be able to:	
<b>CO1</b>	understand the structure and affinities of invertebrate animals
<b>CO2</b>	understand the techniques to prepare mounted slides of biological specimen
<b>CO3</b>	understand the internal structures & appendages of invertebrate via dissection/demonstration
<b>CO4</b>	acquaint with various embryonic stages of chick & frog
<b>CO5</b>	understand cell division stages

<b>BSc Zoology Course IV: <i>Vertebrates and Evolution</i></b>	
After successful completion of the course, students will be able to:	
<b>CO1</b>	understand the structure and working of skeleton, circulatory and muscular system, nervous system and other organs
<b>CO2</b>	distinguish the structural characteristics of animal kingdom
<b>CO3</b>	understand various theories of evolution
<b>CO4</b>	understand the process of origin of life and evolution, and its various driving forces
<b>CO5</b>	understand the fossils, fossilization and their importance

<b>BSc Zoology Course V: <i>Animal physiology &amp; Biochemistry</i></b>	
After successful completion of the course, students will be able to:	
<b>CO1</b>	understand the nutrition and the process of metabolism in animals
<b>CO2</b>	understand the physiological process of respiration, excretion and immune response in mammals
<b>CO3</b>	understand the role and significance of enzymes and vitamins
<b>CO4</b>	understand the process of neuro-muscular activities
<b>CO5</b>	get acquainted with the physiology and functions of various hormones

<b>BSc Zoology Course VI: <i>Practical Zoology</i></b>	
After successful completion of the course, students will be able to:	
<b>CO1</b>	know about the commercially available species of fishes
<b>CO2</b>	understand the structure & affinities of the vertebrate animals

<b>CO3</b>	acquaint with the animal species with evolutionary importance
<b>CO4</b>	accustom with the analysis of biomolecules, enzyme activities & blood group
<b>CO5</b>	accustom with the internal structure of various glands & organs

<b>BSc Zoology Course VII : <i>Genetics</i></b>	
After successful completion of the course, students will be able to:	
<b>CO1</b>	understand the concept of genetics and underlying phenomena
<b>CO2</b>	understand the structure and function of DNA, gene and gene expression
<b>CO3</b>	understand the process of inheritance and chromosomal aberration
<b>CO4</b>	understand human genome project and its importance
<b>CO5</b>	understand various techniques used in genetic engineering

<b>BSc Zoology Course VIII: <i>Ecology &amp; Applied Zoology</i></b>	
After successful completion of the course, students will be able to:	
<b>CO1</b>	achieve in-depth knowledge on various aspects of ecology
<b>CO2</b>	get acquainted with the various types of ecological habitats and concept of biodiversity
<b>CO3</b>	understand the importance of wild-life and environment conservation
<b>CO4</b>	understands the basics of aquaculture techniques
<b>CO5</b>	understand the commercial application of insects

<b>BSc Zoology Course IX: <i>Zoology Practical</i></b>	
After successful completion of the course, students will be able to:	
<b>CO1</b>	identify the major fresh water, marine & terrestrial fauna
<b>CO2</b>	acquaint with various criteria to analyse water quality
<b>CO3</b>	realize the significance of wildlife, ecosystem & environment
<b>CO4</b>	get familiar with various analytical instruments
<b>CO5</b>	understand the applicability of zoology as a source of additional income and self-employment

**PROGRAMME SPECIFIC OUTCOMES (PSO) For B.Sc. Programme: B.Sc. III Year  
Programme with Microbiology as an optional subject in Bio Group.**

**After completion of degree, the students should have:**

<b>PSO1</b>	theoretical and practical knowledge about general microbiology, molecular biology, and biochemical techniques, which is the base for gaining scientific knowledge and insight about the subject.
<b>PSO2</b>	exposed to the field of microbiology and other allied life science subjects and prepare them for promising career options in research, industries and academics

**COURSE OUTCOMES (COS): B.Sc. III Year Programme with Microbiology as an optional  
subject in Bio Group.**

**Course I: General Microbiology and Cell Biology (Paper I)**

After completing this course in Microbiology, a student shall have the understanding of:

<b>CO1:</b>	Indian traditional knowledge and historical background of microbiology.
<b>CO2:</b>	ultra-structure of bacterial cell.
<b>CO3:</b>	general characteristics of Fungi and Viruses.
<b>CO4:</b>	structural organization and function of cell organelles.
<b>CO5:</b>	isolation and maintenance of microorganisms.

**Course II: Tools and techniques in Microbiology (Paper II)**

After completing this course in Microbiology, a student shall have understood of:

<b>CO1:</b>	the basic lab glassware to be used in the laboratory.
<b>CO2:</b>	summarize different methods of sterilization and isolation of pure cultures.
<b>CO3:</b>	Understand the working of different kinds of instruments and microscopes.
<b>CO4:</b>	Apply serial dilution technique to isolate the bacteria
<b>CO5:</b>	Practice different methods to culture bacteria in the laboratory.
<b>CO6:</b>	Illustrate a method to differentiate between Gram positive and Gram-negative bacteria.

**Course III : Biochemistry & Microbial physiology (Paper I)**

After successful completion of course, a student will be able to:

<b>CO1:</b>	identify biological compounds like carbohydrates proteins and lipids.
<b>CO2:</b>	explain the effects of UV light on growth of bacteria.
<b>CO3:</b>	explain different metabolic pathway is like glycolysis, pentose phosphate pathway, krebs cycle

#### **Course IV: Microbial genetics and molecular biology**

After successful completion of course, a student will be able to:

<b>CO1:</b>	Demonstrate the isolation of DNA.
<b>CO2:</b>	Explain the basics of microbial genetics and molecular biology.
<b>CO3:</b>	To determine the pH of a given solution.
<b>CO4:</b>	To prepare a buffer solution. To explain the effect of mutagen on the growth of bacteria.
<b>CO5:</b>	To study antibiotic resistance in bacteria.

#### **Course V: Applied and environmental microbiology (Paper I)**

After successful completion of course a student will be able to:

<b>CO1:</b>	demonstrate the design of a fermenter.
<b>CO2:</b>	explain the industrial production of alcohol, organic acid, enzymes, antibiotics and vitamins.
<b>CO3:</b>	to explain physical and microbial spoilage of food and food products.
<b>CO4:</b>	to summarise different concept of environment in relation to microbes

#### **Course VI: Immunology and medical microbiology (Paper II)**

After successful completion of course a student will be able to:

<b>CO1:</b>	perform the blood group test for given sample. Demonstrate different important immunological techniques like ELISA for HIV infection and RIA etc.
<b>CO2:</b>	explain the process of immunization autoimmunity hypersensitivity.
<b>CO3:</b>	apart from the regular and hardworking student in program B Sc microbiology will be able to explain the structural details of microorganisms their physiology growth and development processes.
<b>CO4:</b>	also, he or she will be able to handle different types of microscopes. The students will be able to use different antimicrobial agents to control the growth of unwanted microorganisms.

**PROGRAMME SPECIFIC OUTCOMES (PSO) For B.Sc. Programme: B.Sc. III Year  
Programme with Computer Science as an optional subject in PCM Group.**

**After completion of degree, the students will be able to:**

<b>PSO1</b>	apply fundamental principles and methods of Computer Science to a wide range of applications.
<b>PSO2</b>	prepare for continued professional development.
<b>PSO3</b>	demonstrate understanding of the principles and working of the hardware and software aspects of computer systems.
<b>PSO4</b>	design, implements, test and evaluate a computer system, component to meet desired needs and to solve a computational problem.
<b>PSO5</b>	to Enhance skills and adapt new computing technologies for attaining professional excellence and carrying research.

**COURSE OUTCOMES (COS): B.Sc. III Year Programme with Computer Science as an  
optional subject in PCM Group.**

**Course 1 Fundamentals of Computers**

After successful completion of the Course, a student will be able to:

<b>CO1</b>	learn the basic operation and characteristics of basic computer.
<b>CO2</b>	design simple documents using word and Excel and its various commands.
<b>CO3</b>	learn the basic operation and characteristics of digital computer
<b>CO4</b>	get knowledge about memory management in computer.
<b>CO5</b>	know about architecture of CPU.

**Course 2 Programming in C**

After successful completion of the Course, a student will be able to:

<b>CO1</b>	learn about programming language, and its classification.
<b>CO2</b>	get knowledge about structure of C.
<b>CO3</b>	familiar with input output operations and control statement.
<b>CO4</b>	study about array, recursion and structure.
<b>CO5</b>	get knowledge about file handling in C.

**Course 3 Object Oriented Programming Concepts Using C++**

After successful completion of the Course, a student will be able to:

<b>CO1</b>	basic knowledge of C++.
<b>CO2</b>	learn about operator's token and looping statements
<b>CO3</b>	practical knowledge of implementing class and its member function.



<b>C04</b>	study about operator overloading, Constructor, and types of inheritance.
<b>C05</b>	practical knowledge of array of classes, dynamic binding, pure virtual function.

#### **Course 4 Data Structure**

After successful completion of the Course, a student will be able to:

<b>C01</b>	knowledge of basic concept of data structure.
<b>C02</b>	study of linked list and its application.
<b>C03</b>	study about binary tree and traversal.
<b>C04</b>	knowledge of binary search tree and all type of sorting.
<b>C05</b>	deep knowledge of graphs and graph traversal.

#### **Course 5 Operating System Concepts**

After successful completion of the Course, a student will be able to:

<b>C01</b>	to understand basic Concept of Operating System.
<b>C02</b>	to know CPU Scheduling algorithms.
<b>C03</b>	knowledge of memory management.
<b>C04</b>	to understand interprocess communication.
<b>C05</b>	study about Linux operating system.

#### **Course 6 Database Management System**

After successful completion of the Course, a student will be able to :

<b>C01</b>	study about basic concepts of DBMS and three level architecture.
<b>C02</b>	to understand entity relationship model.
<b>C03</b>	knowledge about relational algebra.
<b>C04</b>	basic knowledge of normalization.
<b>C05</b>	to know basic of indexing and hashing

# **BACHELOR OF BUSINESS ADMINISTRATION (B.B.A)**

## **PROGRAMME OUTCOMES**

After graduation a student will be able to

<b>PO:1</b>	Disciplinary knowledge: Capable of demonstrating comprehensive knowledge and understanding of one or more disciplines that form a part of an undergraduate programme of study.
<b>PO:2</b>	Communication Skills: Ability to express thoughts and ideas effectively in writing and orally; Communicate with others using appropriate media; confidently share one's views and express herself/himself; demonstrate the ability to listen carefully, read and write analytically, and present complex information in a clear and concise manner to different groups.
<b>PO:3</b>	Critical thinking: Capability to apply analytic thought to a body of knowledge; analyse and evaluate evidence, arguments, claims, beliefs on the basis of empirical evidence; identify relevant assumptions or implications; formulate coherent arguments; critically evaluate practices, policies and theories by following scientific approach to knowledge development.
<b>PO:4</b>	Problem solving: Capacity to extrapolate from what one has learned and apply their competencies to solve different kinds of non-familiar problems, rather than replicate curriculum content knowledge; and apply one's learning to real life situations.
<b>PO:5</b>	Analytical reasoning: Ability to evaluate the reliability and relevance of evidence; identify logical flaws and holes in the arguments of others; analyse and synthesize data from a variety of sources; draw valid conclusions and support them with evidence and examples and addressing opposing viewpoints.
<b>PO:6</b>	Research-related skills: A sense of inquiry and capability for asking relevant/appropriate questions, problematizing, synthesizing, and articulating; Ability to recognize cause-and-effect relationships, define problems, formulate hypotheses, test hypotheses, analyze, interpret and draw conclusions from data, establish hypotheses, predict cause-and-effect relationships; ability to plan, execute and report the results of an experiment or investigation.
<b>PO:7</b>	Cooperation/Teamwork: Ability to work effectively and respectfully with diverse teams; facilitate cooperative or coordinated effort on the part of a group, and act together as a group or a team in the interests of a common cause and work efficiently as a member of a team.
<b>PO:8</b>	Scientific reasoning: Ability to analyze, interpret and draw conclusions from quantitative/qualitative data; and critically evaluate ideas, evidence, and experiences from an open-minded and reasoned perspective.
<b>PO:9</b>	Reflective thinking: Critical sensibility to lived experiences, with self-awareness and reflexivity of both self and society.
<b>PO:10</b>	Information/digital literacy: Capability to use ICT in a variety of learning situations, demonstrate ability to access, evaluate, and use a variety of relevant information sources; and use appropriate software for analysis of data.
<b>PO:11</b>	Self-directed learning: Ability to work independently, identify appropriate resources required for a project, and manage a project through to completion. Multicultural

	competence: Possess knowledge of the values and beliefs of multiple cultures and a global perspective; and capability to effectively engage in a multicultural society and interact respectfully with diverse groups.
<b>PO:12</b>	Moral and ethical awareness/reasoning: Ability to embrace moral/ethical values in conducting one's life, formulate a position/argument about an ethical issue from multiple perspectives, and use ethical practices in all work. Capable of demonstrating the ability to identify ethical issues related to one's work avoid unethical behavior such as fabrication, falsification or misrepresentation of data or committing plagiarism, not adhering to intellectual property rights; appreciating environmental and sustainability issues; and adopting objective, unbiased and truthful actions in all aspects of work.
<b>PO:13</b>	Leadership readiness/qualities: Capability for mapping out the tasks of a team or an organization, and setting direction, formulating an inspiring vision, building a team who can help achieve the vision, motivating and inspiring team members to engage with that vision, and using management skills to guide people to the right destination, in a smooth and efficient way.
<b>PO:14</b>	Lifelong learning: Ability to acquire knowledge and skills, including, learning how to learn", that are necessary for participating in learning activities throughout life, through self-paced and self-directed learning aimed at personal development, meeting economic, social, and cultural objectives, and adapting to changing trades and demands of workplace through knowledge / skill development / reskilling.
<b>PO:15</b>	impart knowledge of management key concept and terms, management Theory and History, Management Process.
<b>PO:16</b>	impart knowledge on how to work on effectively organize a business and other activities in the business.
<b>PO:17</b>	guide the students on development, maintenance, and allocation of resources to attain organizational goals.
<b>PO:18</b>	show the right way of commanding subordinates, issuing orders.
<b>PO:19</b>	impart knowledge on the role, responsibility, and importance of leadership in Business management.

## **PROGRAMME SPECIFIC OUTCOMES AND COURSE OUTCOME**

### **PROGRAMME SPECIFIC OUTCOMES (PSO) For B.B.A Programme**

**After completion of degree, the students should have:**

<b>PSO1</b>	made himself/herself industry and company ready
<b>PSO2</b>	attained an understanding of the fundamentals of creating and managing innovation , new business development, and high growth potential entities
<b>PSO3</b>	attained analytical and critical thinking abilities for business decision making
<b>PSO4</b>	become capable of recognizing and resolving ethical issues
<b>PSO5</b>	Prepared himself/herself for managerial roles and as entrepreneurs

### **COURSE OUTCOMES (COS): B.B.A. III Year Programme**

#### **Course I : Business management**

**Upon the Completion of the course, a student will be able to:**

<b>CO1:</b>	understand what management is and integrate management principles into management practices.
<b>CO2:</b>	exhibit effective decision-making skill, employing analytical and critical ability thinking.
<b>CO3:</b>	learn about common organizational structure and their advantage and disadvantage.
<b>CO4:</b>	distinguish between authority and responsibility also they can select right person for right job
<b>CO5:</b>	identify the traits, dimensions, and effective and poor leadership through various leadership style and theories.

#### **Course II : Communication Skills**

**Upon the Completion of the course, a student will be able to:**

<b>CO1</b>	understand Ethical Theory and skills to interact and know how to do it effectively.
<b>CO2</b>	practice group communication skills. They will also learn how to respond in discussion and interviews.
<b>CO3</b>	learn nonverbal communication , listening and organizational culture.

<b>CO4</b>	equip himself/herself with the knowledge of professional communication through the basic principles of writing professional papers and other documents.
<b>CO5</b>	communicate in seminars, conference and other other business activities.

### **Course III : Personality Development**

**Upon the Completion of the course, a student will be able to:**

<b>CO1</b>	cultivate skills for successful life and learn to handle failures
<b>CO2</b>	understand the importance of time and stress management. Develop core skills for employability
<b>CO3</b>	develop effective communication skills
<b>CO4</b>	learn the process of goal setting and SWOT analysis realize
<b>CO5</b>	role of technology in personality development

### **Course IV : Project Management**

**Upon the Completion of the course, a student will be able to:**

<b>CO1</b>	manage long term assets to improve the efficiency or capacity of the company
<b>CO2</b>	evaluate projects from the viewpoint of society economy as a whole
<b>CO3</b>	Get acquainted with various Network techniques that will help them planning scheduling and controlling the process of complies projects
<b>CO4</b>	learn time management and cost management in various types of projects
<b>CO5</b>	channelize taxable income to various investment plans

### **Course V : Organizational Behaviour**

**Upon the Completion of the course, a student will be able to:**

<b>CO1</b>	understand the evolution and explain the dimensions and culture of organizational behaviour.
<b>CO2</b>	develop the key components of effective communication in contemporary organizational life
<b>CO3</b>	understand group dynamics and can exhibit skill required for working in groups(Teambuilding)
<b>CO4</b>	learn how to overcome Stress at Individual and organizational level both psychological and physiological
<b>CO5</b>	measure an individual's ability to operate within business organization and

	beliefs and attitudes which guide behaviour of its members
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### **Course VI: Financial Management**

**Upon the Completion of the course, a student will be able to:**

<b>CO1</b>	know the cause and effects of over capitalization and under capitalizations
<b>CO2</b>	know the position of business and able to redistribution of funds to various Investment prospects.
<b>CO3</b>	know how to generate the capital and techniques to allocate those funds
<b>CO4</b>	evaluate major projects and the investment process
<b>CO5</b>	make decision regarding pay outs to the shareholders

### **Course VII : Management Information System (MIS)**

**Upon the Completion of the course, a student will be able to:**

<b>CO1</b>	evaluate the role of Information system in today's competitive business environment
<b>CO2</b>	explain how enterprise system and industrial networks create new efficiencies for business
<b>CO3</b>	define all information system from both technical and business perspectives
<b>CO4</b>	analyze and synthesize business information and system to facilitate the organization

### **Course VIII : Business Environment**

**Upon the Completion of the course, a student will be able to:**

<b>CO1</b>	know how Business and Environment are mutually Interdependent
<b>CO2</b>	know how to set up the welfare state, economic Planning and industrial policy
<b>CO3</b>	know how technology becomes an effective instrument of growth in various industrial and service sector and how it drives maximum output from resources.
<b>CO4</b>	understand the objective concern for welfare of society and to protect fundamental rights of consumer
<b>CO5</b>	understand international trade and how the country is integrated with world economy and by globalization world turns into one market.

## **Course IX: Wages And Salary Administration**

**Upon the Completion of the course, a student will be able to:**

<b>CO1</b>	know activities involved in development, implement and maintained of a pay system by wages and salary administration
<b>CO2</b>	differentiate wages between workers based on skills and working place or industry
<b>CO3</b>	improve the motivation and morale of employee
<b>CO4</b>	project a good image of the company and to comply with a legal need related to wages and salary
<b>CO5</b>	control labour and administrative costs in line with the ability of the organization to pay

## **BACHELOR OF COMPUTER APPLIATIONS (B.C.A)**

### **PROGRAMME OUTCOMES**

<b>PO:1</b>	Disciplinary knowledge: Capable of demonstrating comprehensive knowledge and understanding of one or more disciplines that form a part of an undergraduate programme of study.
<b>PO:2</b>	Communication Skills: Ability to express thoughts and ideas effectively in writing and orally; Communicate with others using appropriate media; confidently share one's views and express herself/himself; demonstrate the ability to listen carefully, read and write analytically, and present complex information in a clear and concise manner to different groups.
<b>PO:3</b>	Critical thinking: Capability to apply analytic thought to a body of knowledge; analyse and evaluate evidence, arguments, claims, beliefs on the basis of empirical evidence; identify relevant assumptions or implications; formulate coherent arguments; critically evaluate practices, policies and theories by following scientific approach to knowledge development.
<b>PO:4</b>	Problem solving: Capacity to extrapolate from what one has learned and apply their competencies to solve different kinds of non-familiar problems, rather than replicate curriculum content knowledge; and apply one's learning to real life situations.
<b>PO:5</b>	Analytical reasoning: Ability to evaluate the reliability and relevance of evidence; identify logical flaws and holes in the arguments of others; analyse and synthesize data from a variety of sources; draw valid conclusions and support them with evidence and examples and addressing opposing viewpoints.
<b>PO:6</b>	Research-related skills: A sense of inquiry and capability for asking relevant/appropriate questions, problematizing, synthesizing, and articulating; Ability to recognize cause-and-effect relationships, define problems, formulate hypotheses, test hypotheses, analyze, interpret and draw conclusions from data, establish hypotheses, predict cause-and-effect relationships; ability to plan, execute and report the results of an experiment or investigation.
<b>PO:7</b>	Cooperation/Teamwork: Ability to work effectively and respectfully with diverse teams; facilitate cooperative or coordinated effort on the part of a group, and act together as a group or a team in the interests of a common cause and work efficiently as a member of a team.
<b>PO:8</b>	Scientific reasoning: Ability to analyze, interpret and draw conclusions from quantitative/qualitative data; and critically evaluate ideas, evidence, and experiences from an open-minded and reasoned perspective.
<b>PO:9</b>	Reflective thinking: Critical sensibility to lived experiences, with self-awareness and reflexivity of both self and society.
<b>PO:10</b>	Information/digital literacy: Capability to use ICT in a variety of learning situations, demonstrate ability to access, evaluate, and use a variety of relevant information sources; and use appropriate software for analysis of data.
<b>PO:11</b>	Self-directed learning: Ability to work independently, identify appropriate resources required for a project, and manage a project through to completion. Multicultural competence: Possess knowledge of the values and beliefs of multiple cultures and a global



	perspective; and capability to effectively engage in a multicultural society and interact respectfully with diverse groups.
<b>PO:12</b>	Moral and ethical awareness/reasoning: Ability to embrace moral/ethical values in conducting one's life, formulate a position/argument about an ethical issue from multiple perspectives, and use ethical practices in all work. Capable of demonstrating the ability to identify ethical issues related to one's work avoid unethical behavior such as fabrication, falsification or misrepresentation of data or committing plagiarism, not adhering to intellectual property rights; appreciating environmental and sustainability issues; and adopting objective, unbiased and truthful actions in all aspects of work.
<b>PO:13</b>	Leadership readiness/qualities: Capability for mapping out the tasks of a team or an organization, and setting direction, formulating an inspiring vision, building a team who can help achieve the vision, motivating and inspiring team members to engage with that vision, and using management skills to guide people to the right destination, in a smooth and efficient way.
<b>PO:14</b>	Lifelong learning: Ability to acquire knowledge and skills, including, learning how to learn", that are necessary for participating in learning activities throughout life, through self-paced and self-directed learning aimed at personal development, meeting economic, social, and cultural objectives, and adapting to changing trades and demands of workplace through knowledge / skill development / reskilling.
<b>PO:15</b>	An ability to apply knowledge of mathematics, computer science and management in practice
<b>PO:16</b>	An ability to enhance not only comprehensive understanding of the theory but its application too in diverse field.
<b>PO:17</b>	The program prepares the young professional for a range of computer applications, computer organization, techniques of Computer Networking, Software Engineering, Web development, Database management and Advance Java
<b>PO:18</b>	An ability to design a computing system to meet desired needs within realistic constraint such as safety, security and applicability in multidisciplinary teams with positive attitude.
<b>PO:19</b>	To enhance programming skills of the young IT professionals, the program has introduced the concept of project development in each language/technology learnt during semester

## PROGRAMME SPECIFIC OUTCOMES AND COURSE OUTCOME

### PROGRAMME SPECIFIC OUTCOMES (PSO) For B.C.A Programme

After completion of degree, the students would have:

<b>PSO1</b>	got acquainted with the roles pertaining to computer applications and IT industry.
<b>PSO2</b>	developed programming skills, networking skills, learn applications, packages, programming languages and modern techniques of IT.
<b>PSO3</b>	learnt programming language such as Java, C++, HTML, SQL, etc...
<b>PSO4</b>	acquired an overview of the topics in IT like networking, computer graphics, web development, trouble shooting, and hardware and software skills.
<b>PSO5</b>	become eligible and skilled in attaining employment in IT field.

### COURSE OUTCOMES (COS): B.C.A. III Year Programme

<b>Course I : Computer Fundamentals, Organization and Architecture</b>	
After successful completion of the course, students will be able to:	
<b>CO1</b>	understand the basic structure, Operation, and characteristics of digital computer.
<b>CO2</b>	design simple combinational digital circuits based on given parameters
<b>CO3</b>	understand the working of arithmetic and logic unit.
<b>CO4</b>	know about hierarchical memory system including cache memories and virtual memories.
<b>CO5</b>	Know the contributions of Indians in the field of computer architecture and related technology.

<b>Course II : Programming Methodology &amp; Data Structures</b>	
After successful completion of the course, students will be able to:	
<b>CO1</b>	develop simple algorithms and flow charts to solve a problem with programming using top down design principal
<b>CO2</b>	write efficient and well-structured computer algorithms/programs.
<b>CO3</b>	learn to formulate iterative solutions and array processing algorithms for problems.
<b>CO4</b>	have knowledge of complexity of basic operations like insert, delete, search on these data structures.
<b>CO5</b>	know the contributions of Indians in the field of programming and data structures.

<b>Course III : Operating System</b>	
After successful completion of the course, students will be able to:	
<b>CO1</b>	describe the importance of computer system resources and the role of operating system in their management policies and algorithms.

<b>C02</b>	understand various process management concepts and can compare various scheduling techniques, synchronization, and deadlocks.
<b>C03</b>	identify the best suited process management technique for any process.
<b>C04</b>	describe various file operations, file allocation methods and disk space management.
<b>C05</b>	learn to operate the Linux system,

<b>Course IV :Numerical Methods</b>	
After successful completion of the course, students will be able to:	
<b>C01</b>	understand numerical methods to find the solution of a system of linear equations.
<b>C02</b>	compute interpolation value for real data'
<b>C03</b>	find quadrature by using various numerical methods.
<b>C04</b>	solve system of linear equations by using various numerical techniques.
<b>C05</b>	obtain solutions of ordinary differential equations by using numerical methods.

<b>Course IV : Personality Development</b>	
After successful completion of the course, students will be able to:	
<b>C01</b>	understand, analyse develop and exhibit accurate sense of self.
<b>C02</b>	think critically.
<b>C03</b>	find quadrature by using various numerical methods.
<b>C04</b>	learn to balance confidence with humility and overcome problems associated with personality.
<b>C05</b>	the students know about self-awareness, life skills, soft skills, need for personal development etc.

<b>Course V: Computer Fundamentals, Organization and Digital Lab (Practical - I)</b>	
After successful completion of the course, students will be able to:	
<b>C01</b>	be familiar with different parts of the computer and peripheral devices used with the computer.
<b>C02</b>	get acquainted with the basic logic and universal gates.
<b>C03</b>	verify the behaviour of logic gates using truth tables.
<b>C04</b>	carry out Binary-to -Gray, Gray-to -Binary code conversions.
<b>C05</b>	design and construct flip flops and verify the excitation tables.

<b>Course VI: Programming Methodology &amp; Data Structures Lab (Practical – II)</b>	
After successful completion of the course, students will be able to:	
<b>C01</b>	use recursive techniques, Pointers and searching methods in programming.
<b>C02</b>	understand programming languages, number systems, peripheral devices, networking, multimedia, and internet concepts.
<b>C03</b>	read, understand, and trace the execution of programs written in C++ language.
<b>C04</b>	perform input and output operations using programs in C++.
<b>C05</b>	write programs that perform operations on arrays.

<b>Course VII : Operating System (Practical - III)</b>	
After successful completion of the course, students will be able to:	
<b>CO1</b>	understand fundamental operating system abstractions such as processes, threads, files, semaphores, IPC abstractions, shared memory regions, etc.,
<b>CO2</b>	analyze important algorithms. Process scheduling and memory management algorithms.
<b>CO3</b>	categorize the operating system's resource management techniques, dead lock management techniques, memory management techniques.
<b>CO4</b>	demonstrate the ability to perform OS tasks in Red Hat Linux Enterprise.
<b>CO5</b>	do administration using Vi Editor.

<b>Course VIII : Data Structure using C++</b>	
After successful completion of the course, students will be able to:	
<b>CO1</b>	know the principles of oops concept and control structure.
<b>CO2</b>	analyze the concept of classes and object, array, functions, constructor and destructor
<b>CO3</b>	understand the concept of inheritance and pointers virtual function & polymorphism.
<b>CO4</b>	able to work with files, file pointers and its manipulations.
<b>CO5</b>	know the concept of function templates and exception handling.

<b>Course IX: DBMS &amp; RDBMS</b>	
After successful completion of the course, students will be able to:	
<b>CO1</b>	give an introduction about DBMS, data models, a schema, E-R diagram, relational database and benefits of database.
<b>CO2</b>	able to design a good database using normalization, decomposition and functional dependency.
<b>CO3</b>	understand the concepts of database architecture, client server architecture, parallelism concepts and distributed database concepts
<b>CO4</b>	learn about indexes, sequences, data integrity, creating and maintaining tables and user privileges in RDBMS.
<b>CO5</b>	understand the basic concepts of PL/SQL programming, cursors, triggers, packages, procedures, functions and transactions.

<b>Course X: Internet &amp; E-Commerce</b>	
After successful completion of the course, students will be able to:	
<b>CO1</b>	be Able to use internet. Services USENET, GOPHER, WAIS, ARCHIE and VERONICA, IRC. WORLD WIDE WEB (WWW).
<b>CO2</b>	be able to use the HTML programming language. Resolves written HTML codes.
<b>CO3</b>	understand the basic concepts and technologies used in the field of management information systems;

<b>CO4</b>	summarize variable naming rules and JavaScript data types and identify expressions and operators.
<b>CO5</b>	impart the students with higher level knowledge and understanding of contemporary trends in e-commerce and business finance.

<b>Course XI : Data Communication and Computer Networks</b>	
After successful completion of the course, students will be able to:	
<b>CO1</b>	understand network communication using the layered concept, Open System Interconnect (OSI) and the Internet Model.
<b>CO2</b>	understand various types of transmission media, network devices; and parameters of evaluation of performance for each media and device.
<b>CO3</b>	understand the concept of flow control, error control and LAN protocols; to explain the design of, and algorithms used in, the physical, data link layers.
<b>CO4</b>	understand the working principles of LAN and the concepts behind physical and logical addressing, subnetting and supernetting.
<b>CO5</b>	understand the functions performed by a Network Management System and to analyze connection establishment and congestion control with respect to TCP Protocol.

<b>Course XII: Systems Analysis Design &amp; Software Engineering</b>	
After successful completion of the course, students will be able to:	
<b>CO1</b>	have a firm basis for understanding the life cycle of a systems development project;
<b>CO2</b>	an understanding of the analysis and development techniques required as a team member of a medium-scale information systems development project;
<b>CO3</b>	gain experience in developing information systems models;
<b>CO4</b>	choose appropriate process model depending on the user requirements.
<b>CO5</b>	apply the knowledge, techniques, and skills in the development of a software product.

<b>Course XIII :Managerial Economics and Management Information System</b>	
After successful completion of the course, students will be able to:	
<b>CO1</b>	develop an understanding of the applications of managerial economics.
<b>CO2</b>	interpret regression analysis and discuss why it's employed in decision-making.
<b>CO3</b>	analyze perfectly competitive markets including substitution.
<b>CO4</b>	relate the basic concepts and technologies used in the field of management information systems;
<b>CO5</b>	translate the role of information systems in organizations, the strategic management processes, with the implications for the management.

<b>Course XIV: Data Structure using C++ (Practical – I)</b>	
After successful completion of the course, students will be able to:	
<b>CO1</b>	design, implement, test, debug and document programs in C++.
<b>CO2</b>	apply fundamental algorithmic problems including type casting, inheritance, and polymorphism
<b>CO3</b>	develop solutions for a range of problems using objects and classes.
<b>CO4</b>	develop programs to demonstrate the implementation of constructors, destructors and operator overloading
<b>CO5</b>	understand generic programming, templates, file handling

<b>Course XV: DBMS &amp; RDBMS (Practical – II)</b>	
After successful completion of the course, students will be able to:	
<b>CO1</b>	carry out Basic DDL, DML and DCL commands
<b>CO2</b>	understand Data selection and operators used in queries and restrict data retrieval and control the display order
<b>CO3</b>	write sub queries and understand their purpose.
<b>CO4</b>	join multiple tables using different types of joins
<b>CO5</b>	understand the PL/SQL architecture and write PL/SQL code for procedures, triggers, cursors, exception handling etc..

<b>Course XVI: Data Structure using C++ Or DBMS &amp; RDBMS (Minor Project)</b>	
After successful completion of the course, students will be able to:	
<b>CO1</b>	create an Industrial environment and culture within the institution.
<b>CO2</b>	standardize laboratories to industrial standard, thereby giving exposure to industrial housekeeping standards.
<b>CO3</b>	provide students hands on experience on, troubleshooting, maintenance, fabrication, innovation, record keeping, documentation etc thereby enhancing the skill and competency part of technical education.
<b>CO4</b>	inculcate innovative thinking and thereby preparing students for main project.
<b>CO5</b>	Develop application to solve real world problems.

<b>Course: XVII: Programming with JAVA</b>	
After successful completion of the course, students will be able to:	
<b>CO1</b>	understand basic oops concept. Java evaluation & implementation overview of java.
<b>CO2</b>	know operators and expressions, decision making and branching, Decision making and looping.
<b>CO3</b>	understand classes and methods, array strings and vectors, interface concept instead of multiple inheritances.
<b>CO4</b>	carry out using Java, multithreaded programming that contains synchronization, managing errors and exceptions handling.

<b>CO5</b>	perform applet programming designing HTML, graphic Programming.
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<b>Course XVIII: Artificial Intelligence &amp; Expert Systems</b>	
After successful completion of the course, students will be able to:	
<b>CO1</b>	solve basic AI based problems.
<b>CO2</b>	define the concept of Artificial Intelligence.
<b>CO3</b>	apply AI techniques to real-world problems to develop Knowledge representation.
<b>CO4</b>	select appropriately from a range of techniques when implementing Expert systems.
<b>CO5</b>	develop an understanding the basic structure of a neural network.

<b>Course XIX: Internet Technology with ASP.NET and C#</b>	
After successful completion of the course, students will be able to:	
<b>CO1</b>	explain the three pillars of object-oriented programming.
<b>CO2</b>	develop working knowledge of C#programming constructs and the .NET Framework.
<b>CO3</b>	write an object-oriented program using custom classes.
<b>CO4</b>	build and debug well-formed Web Forms with ASP.
<b>CO5</b>	perform form validation with validation controls.

<b>Course XX: Computer Graphics &amp; Multimedia</b>	
After successful completion of the course, students will be able to:	
<b>CO1</b>	understand the basics of computer graphics, different graphics systems and applications of computer graphics.
<b>CO2</b>	discuss various algorithms for scan conversion & filling of their comparative analysis.
<b>CO3</b>	extract scene with different clipping methods and its transformation to graphics display device.
<b>CO4</b>	explore projections & visible surface detection techniques for display of 3D scene on 2D screen.
<b>CO5</b>	render projected objects to naturalize the scene in 2D view and use of illumination models for this.

<b>Course XXI: Microprocessor and Interfacing</b>	
After successful completion of the course, students will be able to:	
<b>CO1</b>	understand the taxonomy of microprocessors and knowledge of contemporary microprocessors.
<b>CO2</b>	describe the architecture, bus structure and memory organization of 8085 as well as higher order microprocessors.

<b>CO3</b>	explore techniques for interfacing I/O devices to the microprocessor 8085 including several specific standard I/O devices such as 8251 and 8255.
<b>CO4</b>	demonstrate programming abilities using the various addressing modes and instruction set of 8085 microprocessors.
<b>CO5</b>	design structured, well commented, understandable assembly language programs to provide solutions to real world control problems.

<b>Course XXII: Enterprise Resource Planning and Organizational Behaviour</b>	
After successful completion of the course, students will be able to:	
<b>CO1</b>	make basic use of Enterprise software, and its role in integrating business functions.
<b>CO2</b>	analyze the strategic options for ERP identification and adoption.
<b>CO3</b>	create reengineered business processes for successful ERP implementation.
<b>CO4</b>	discuss the development of the field of organizational behaviour and explain the micro and macro approaches.
<b>CO5</b>	identify the various leadership styles and the role of leaders in a decision-making process.

<b>Cpourse XXIII: Programming with JAVA (Practical – I)</b>	
After successful completion of the course, students will be able to:	
<b>CO1</b>	develop Java program using packages, inheritance, and interface.
<b>CO2</b>	create Multithreaded programs.
<b>CO3</b>	write Java programs to implement error handling techniques using exception handling and develop programs using class and inputs from keyboard.
<b>CO4</b>	develop graphical User Interface using AWT.
<b>CO5</b>	demonstrate event handling mechanism.

<b>Course XXIV: Internet Technology with ASP.NET and C# (Practical – II)</b>	
After successful completion of the course, students will be able to:	
<b>CO1</b>	create user interactive web pages using ASP.Net.
<b>CO2</b>	create simple data binding applications using ADO.Net connectivity.
<b>CO3</b>	perform Database operations for Windows Form and web applications.
<b>CO4</b>	create applications using Microsoft Windows Forms
<b>CO5</b>	describe the basic structure of a Visual Basic.NET project and use main features of the integrated development environment (IDE)



<b>Course XXV: JAVA or Internet Technology with ASP.NET and C# (Major Project</b>	
After successful completion of the course, students will be able to:	
<b>CO1</b>	design and construct a hardware and software system, component, or process to meet desired needs.
<b>CO2</b>	work on multidisciplinary Problems.
<b>CO3</b>	work as professionals, with portfolio ranging from data management, network configuration.
<b>CO4</b>	design hardware, database and software design to management and administration of entire systems.
<b>CO5</b>	track the progress of a project using Open project tool.

## **BACHELOR OF LAW (LL.B.)**

### **PROGRAMME OUTCOMES**

<b>PO:1</b>	Communication Skills: Ability to express thoughts and ideas effectively in writing and orally; Communicate with others using appropriate media; confidently share one's views and express herself/himself; demonstrate the ability to listen carefully, read and write analytically, and present complex information in a clear and concise manner to different groups.
<b>PO:2</b>	Critical thinking: Capability to apply analytic thought to a body of knowledge; analyse and evaluate evidence, arguments, claims, beliefs on the basis of empirical evidence; identify relevant assumptions or implications; formulate coherent arguments; critically evaluate practices, policies and theories by following scientific approach to knowledge development.
<b>PO:3</b>	Problem solving: Capacity to extrapolate from what one has learned and apply their competencies to solve different kinds of non-familiar problems, rather than replicate curriculum content knowledge; and apply one's learning to real life situations.
<b>PO:4</b>	Analytical reasoning: Ability to evaluate the reliability and relevance of evidence; identify logical flaws and holes in the arguments of others; analyse and synthesize data from a variety of sources; draw valid conclusions and support them with evidence and examples and addressing opposing viewpoints.
<b>PO:5</b>	Research-related skills: A sense of inquiry and capability for asking relevant/appropriate questions, problematizing, synthesizing, and articulating; Ability to recognize cause-and-effect relationships, define problems, formulate hypotheses, test hypotheses, analyze, interpret and draw conclusions from data, establish hypotheses, predict cause-and-effect relationships; ability to plan, execute and report the results of an experiment or investigation.
<b>PO:6</b>	Cooperation/Teamwork: Ability to work effectively and respectfully with diverse teams; facilitate cooperative or coordinated effort on the part of a group, and act together as a group or a team in the interests of a common cause and work efficiently as a member of a team.
<b>PO:7</b>	Scientific reasoning: Ability to analyze, interpret and draw conclusions from quantitative/qualitative data; and critically evaluate ideas, evidence, and experiences from an open-minded and reasoned perspective.
<b>PO:8</b>	Reflective thinking: Critical sensibility to lived experiences, with self-awareness and reflexivity of both self and society.
<b>PO:9</b>	Information/digital literacy: Capability to use ICT in a variety of learning situations, demonstrate ability to access, evaluate, and use a variety of relevant information sources; and use appropriate software for analysis of data.
<b>PO:10</b>	Self-directed learning: Ability to work independently, identify appropriate resources required for a project, and manage a project through to completion. Multicultural competence: Possess knowledge of the values and beliefs of multiple cultures and a global perspective; and capability to effectively engage in a multicultural society and interact respectfully with diverse groups.

<b>PO:11</b>	Moral and ethical awareness/reasoning: Ability to embrace moral/ethical values in conducting one's life, formulate a position/argument about an ethical issue from multiple perspectives, and use ethical practices in all work. Capable of demonstrating the ability to identify ethical issues related to one's work avoid unethical behavior such as fabrication, falsification or misrepresentation of data or committing plagiarism, not adhering to intellectual property rights; appreciating environmental and sustainability issues; and adopting objective, unbiased and truthful actions in all aspects of work.
<b>PO:12</b>	Leadership readiness/qualities: Capability for mapping out the tasks of a team or an organization, and setting direction, formulating an inspiring vision, building a team who can help achieve the vision, motivating and inspiring team members to engage with that vision, and using management skills to guide people to the right destination, in a smooth and efficient way.
<b>PO:13</b>	Lifelong learning: Ability to acquire knowledge and skills, including, learning how to learn", that are necessary for participating in learning activities throughout life, through self-paced and self-directed learning aimed at personal development, meeting economic, social, and cultural objectives, and adapting to changing trades and demands of workplace through knowledge / skill development / reskilling.
<b>PO:14</b>	Application and learning of substantive and procedural laws, as also the drafting of pleadings such as institution of suit etc and understanding of the legal setup.
<b>PO:15</b>	Interpretation and analyzing legal and social problems and for ensuring solutions to these problems by application of the necessary laws and rules.
<b>PO:16</b>	Inculcation of values of rights and duties as citizens and to transfer these values into real-life through legal and judicial processes for promoting community welfare.
<b>PO:17</b>	Application of ethical principles and inculcate professional ethics, to undertake responsibilities and norms of the established legal practices.
<b>PO:18</b>	Recognizing the need for and have the preparation and ability to engage in independent and life-long learning in the broader context of legal change

## PROGRAMME SPECIFIC OUTCOMES AND COURSE OUTCOME

### PROGRAMME SPECIFIC OUTCOMES (PSO) For LL.B.

**After completion of degree, the students should have:**

<b>PSO1</b>	attained greater responsibility towards the society- the learners of the programs offered by the institution also contribute towards the social cause as the knowledge of the legal process helps them build a society with greater civic sense and responsibility.
<b>PSO2</b>	gained problem solving ability & critical analysis of case laws- the gaining of legal knowledge enables the learner to solve the problems more effectively by application of the knowledge so acquired and helps them to critically analyse the case laws.
<b>PSO3</b>	inculcated in himself/herself a sense of professionalism- through the study of law, the learners develop professionalism, and it helps them to apply the legal knowledge to better use.
<b>PSO4</b>	the awareness of wide choices of careers – one of the greatest benefits available by studying this program is it offers a wide range of career options to the young professionals such as BDO, mamlatdars, deputy collector, teaching, besides legal practice.
<b>PSO5</b>	opportunity to appear in competitive examinations- this program also enables them to appear for competitive exams for prospects and prepares them accordingly.

### COURSE OUTCOMES (COS): LL.B.

<b>Course – I:</b> <b>Law of Contracts-I</b>	Students will be able to demonstrate a high level of understanding in the matters of contract, commercial agreements and other kinds of agreements and understand as to how contracts and other related agreements are formed and terminated legally.
<b>Course – II:</b> <b>Law of Contracts-II</b>	Students will be able to identify the various types of specific contracts such as Indemnity bond, Guarantee, Bailment, Sale of goods and Partnership etc. and they should be able to learn the technical know-how of the various steps involved right from the formation to the termination of the Contract.
<b>Course – III:</b> <b>Tort &amp; Consumer Protection Laws</b>	While learning law of torts student will learn to relate laws with the case laws as the subject of law of torts only can be learned through different case laws. Students will learn to analyze the case laws and will be able to extract the exact issues of laws from the same. Law of torts teaches a student to question each process in the system.
<b>Course – IV</b> <b>Law of Crimes (IPC)</b>	Students should be able to deal firmly with basic principles Law of crimes. Students should be able to demonstrate a high level of understanding both in theory and practice of the crucial fundamental principles involved in the practice of criminal law in courts.
<b>Course VI</b> <b>Jurisprudence</b>	After completion of this course students will be able to explain the different schools of jurisprudence and the relationship with other social sciences. Also they will Identify the concept of law in Indian legal system. Analyse them and apply in the practice. The students will also understand the various sources of law, custom, precedent, legislation.

<b>Course – VII : Constitutional Law</b>	Students should be able to possess immense skill sets with the enormous knowledge of Constitutional Law, Fundamental rights and fundamental duties etc. Students should be able to understand the novel role of Indian Judiciary in protecting the rights mentioned in the constitution and the knowledge of the democratic organs and its effective functioning. They should have the ability to interpret the duty of state and inter- relationship between fundamental rights and directive principles.
<b>Course - VIII Family Law-I (Hindu Law)</b>	Students should possess the ability to articulate and evaluate how Family Law and Justice caters to the various needs of the society. Students should be able to demonstrate the ability to apply both in theory and in practice the law relating to Matrimony, Succession, Guardianship, Adoption. Students should be able to grasp an in-depth knowledge about the concepts of succession, Women Property-Stridhan, Concept and execution of Wills etc.
<b>Course IX Family Law-I (Muslim Law)</b>	Students should possess the ability to articulate and evaluate how Family Law and Justice caters to the various needs of the society. Students should be able to demonstrate the ability to apply both in theory and in practice the law relating to Matrimony, Succession, Guardianship, Adoption. Students should be able to grasp an in-depth knowledge about the concepts of succession, Women Property-Stridhan, Concept and execution of Wills etc.
<b>Course X Public Interest Lawyering, Legal Aid &amp; Para Legal Services</b>	Understand the Rule of Locus Standi and its relevance in seeking remedy in a court of law. Comprehend the reasons for liberalizing the rule of Locus Standi and acceptance of Public Interest Litigation. Expound the need for protection of group rights. Learn the scope and aspects of Public Interest Litigation. Explore the ways in which a Public Interest Litigation could be drafted and the procedure to be followed upon.
<b>Course XI Property Law including Transfer of Property &amp; Easement Act</b>	Towards the end of this course, the students will be in a position to Analyze and define the concept and nature of transfer of immovable property, and illustrate the different types of transfers and rules relating to it, Evaluate the provisions relating to general transfer of immovable property, Determine and analyze the provisions of Sale, Mortgage, Lease, Exchange, Gift and Actionable Claims etc.
<b>Course XII Company Law</b>	The syllabus gives an outlook about Meaning and formation of a company, its types, characteristics, The concept of “Corporate Charter” i. e MOA & AOA, the different processes, by a company raise their funds, the members, directors working and associated with the company along with their rights and duties. The syllabus will also help the students to know about “Corporate Social Responsibility”, the concept and procedures of “winding up” of a company using various statutes comprising of Companies Act & Insolvency & Bankruptcy Code.
<b>Course XIII</b>	At the completion of the course students will be able to understand the legal history of India and explain the Charter and the Judicial Plans of 1772, 1774 and 1780 and the reforms associated with them. The students will also be able to describe the provisions of the Regulating Act, 1773 and the establishment of Supreme Courts at the three Presidency Towns, the establishment of High Courts and critically

<b>Indian Legal &amp; Constitutional History</b>	describe the working of Privy Council, the Charter Acts of 1833, and 1853 and the reforms associated with it and after all the constitutional developments in India.
<b>Course XIV</b> <b>Criminology &amp; Penology</b>	Students will critically apply fundamental criminology and criminal justice principles to situations related to crime, criminal justice, and related areas of practice, criminology and criminal justice, criminological and punishment theories and penal provisions, they will develop and apply a personal understanding of diversity and the way it impacts work in criminology and criminal justice.
<b>Course XV</b> <b>Administrative Law</b>	Students should be able to understand the ground realities of how administration in India actually functions at different levels and at different cadres, the very functioning of various systems legislative and executive and also the principles of checks and balances and its efficacy in the development of a robust democracy, the historical perspectives and comparative account of the evolution of Administrative law, the emerging trends in the domain of administrative law, good governance, prevention of corruption etc.
<b>Course XVI</b> <b>Trusts, Equity &amp; Fiduciary Relationship</b>	It would further help students to get an insight of the Trust and equity laws, the principles of Fiduciary Relations with exceptions. They will also be able to possess a thorough understanding of the principles of natural justice and maxims of equity and understanding the concepts like Trust and trustee with respect to their rights and duties.
<b>Course XVII</b> <b>Human Rights &amp; Public International Law</b>	Students will be able to demonstrate a high level of understanding in the domain of human rights and its principles and practice, the area of enforcement of human rights at the international, national and the state level, important international conferences various international human rights treaties and covenants and other like related international instruments. They will also be able to exposed to the world of Public International Law and practice, dynamics of the legal practice in the various international courts and tribunals such as ICJ, ICC, etc. the concepts of state succession, consent of states, equality of states, Principle of Non-Interference, State Sovereignty etc. and the emerging trends in the domain of Public International law and practice.
<b>Course XVIII</b> <b>Labour Laws</b>	The students will understand the the Labour laws, labour movements and significance the Labour Laws and Legislations. Students should be able to possess a thorough understanding of the Industrial Disputes Act, Factories Act, Trade Union Act etc, and will be able to demonstrate a high level of understanding in learning the concepts like Maternity rights, fair compensation, unfair labour practices etc.
<b>Course XIX</b> <b>Professional Ethics, Accountability for Lawyers &amp; Bar-Bench Relationship</b>	Students should be able to deal with basic principles of Professional Conduct and ethical issues concerning legal profession, understanding in the matters of Client management, case management, accountancy required to set up law firms and law firm management , ethical inquiries which introduced them to the disciplines, concepts and scientific methods of Legal education and profession, Students should be able to mark a noticeable improvement in Leadership skills and art of advocacy, trial advocacy mannerism, comprehension of legal and legal writing acumen.
<b>Course XX</b>	students will be able to get an insight of the Criminal Procedural Law and its significance in the delivery of Indian Criminal Justice System. The students would learn about the importance of the various kinds of Procedures and a thorough

<b>Criminal Procedure Code, Juvenile Justice Act &amp; Probation of Offenders</b>	understanding of the detailed procedure involved in tune with the substantive criminal law and its interrelationship, the structure of the Criminal law system in the country and a high level of understanding in learning the concepts like Charge, Trial, Appeal Review and Revision etc. They will also understand the concepts of juvenile, justice board, procedure, parole, probation etc.
<b>Course XXI</b>  <b>Civil Procedure &amp; Limitation Act</b>	CPC and the law of limitation aid in discerning the best evidence that can be led in any civil suit whilst discarding that evidence which is futile. After the completion of the course the students will have the knowledge of procedural laws and the consequent procedure adopted by trial and appellate courts. The drafting of pleadings, which form the foundation of any suit or petition, can only be successfully done when one has acute understanding of the procedural laws.
<b>Course XXII</b>  <b>Law of Evidence</b>	It would further help students to get an insight of the Evidence Law and its significance. The students would learn about the importance of various kinds of evidence and its applicability, a thorough understanding of the evidence, confession law, admission law and the procedure pertaining to the same. Students should be able to demonstrate a high level of understanding in learning the concepts like experts, oral and documentary evidences, Presumption of Guilt, how to produce evidence effectively during the trial, examination of witnesses, leading questions etc.
<b>Course XXIII</b>  <b>Practical Training in Law</b>	Students will get an insight of the Drafting, Pleading and conveyancing, They would learn about the importance of the various techniques involved in drafting a legal document and should be able to draft legal documents such as Sale deed, Mortgage deed, Lease deed, gift deed etc required to produce potential procedural practice. Students should be able to understand the complex structure of the Conveyancing in effective manner.
<b>Course XXIV</b>  <b>Tenancy Law &amp; M.P. Accomadation Control Act</b>	This course enables the learner to understand and study the local laws applicable in the state of Madhya Pradesh such as the M.P. Land Revenue Code, M. P. Accomodation Control Act and also to increase the employability of students in these areas of practice of local laws.
<b>Course XXII</b>  <b>Law of Evidence</b>	It would further help students to get an insight of the Evidence Law and its significance. The students would learn about the importance of various kinds of evidence and its applicability, a thorough understanding of the evidence, confession law, admission law and the procedure pertaining to the same. Students should be able to demonstrate a high level of understanding in learning the concepts like experts, oral and documentary evidence, Presumption of Guilt, how to produce evidence effectively during the trial, examination of witnesses, leading questions etc.
<b>Course XXV</b>  <b>Arbitration, Conciliation &amp; Alternate Dispute</b>	The concept of the two most common forms of ADR are arbitration and mediation, which is the preeminent mode of dispute resolution. The syllabus gives knowledge about the dispute resolution through Lok Adalat and other alternate dispute resolution systems. Students will study about International Arbitration, Concept of New York Convention and Geneva convention awards, All the models of dispute settlement, litigation versus Arbitration, its nature and scope etc.

<b>Resolution System</b>	
<b>Course XXVI</b>  <b>Environmental law</b>	<p>Students should be able to understand the historical perspectives and comparative account of the evolution of Environmental law and the best practices adopted for the greater awareness, they should be able to foster a high level of understanding in the matters pertaining to Environmental law, common law aspects, constitutional provisions etc. Students should also be able to understand the emerging trends in the domain of protection of environmental laws and policies. They will learn the acts related to protection of environment like wild life protection, environment protection, biodiversity, forests etc.</p>
<b>Course XXVII</b>  <b>Interpretation of Statutes</b>	<p>After successful completion of the syllabus of interpretation of statutes, students will be able to understand the process of interpretation and its utility, Ascertain the intention of the legislature in enacting a law, Apply general principles of statutory interpretation to construe the law in a manner in alignment with the rules of interpretation, Identify admissible internal and external aids to interpretation, Identify and apply subsidiary rules of interpretation, Understand doctrines relevant to the interpretation of the Constitution, penal and taxation, Interpret legal provisions keeping in view the intention of the legislature while giving reasons on the interpretation arrived at.</p>
<b>Course XXVIII</b>  <b>Legal Language Including General English</b>	<p>Students should be able to write effectively in legal context and knowledge, to draft the various plaints, Written submissions required to be made in courtroom proceedings with effectiveness and preciseness, a noticeable improvement in writing skills and comprehension of legal text, a meticulous training of several projects relevant to the subject and training in better presentation skills.</p>
<b>Course XXIX</b>  <b>Moot Court, Pre- Trial Preparation &amp; participation in Trial Proceeding</b>	<p>Students should be able to learn about the ground realities of how moot courts help shape the future lawyers by inculcating the art of talking, convincing, negotiation, mediation, arbitration etc, It would draw the attention of the very functioning of real courtroom practice, the pros and cons of arguments, legal drafting and legal research. Students should be able to foster a high level of understanding in the matters pertaining to Mock Trials, Trial Advocacy, Mooting Debates, etc, the emerging trends in the domain of Moot Courts and legal research and how the courtroom actually functions.</p>



# **MASTER OF ARTS (MA)**

## **PROGRAMME OUTCOMES**

<b>Subjects</b>	<b>Outcomes</b>
<b><u>Social Sciences</u></b>  <a href="#">Economics</a> <a href="#">Sociology</a> <a href="#">Geography</a> <a href="#">Public Administration</a> <a href="#">MSW</a>	<p>After graduation a student will be able to</p> <p><b>PO:1</b> Communication Skills: Ability to express thoughts and ideas effectively in writing and orally; Communicate with others using appropriate media; confidently share one's views and express herself/himself; demonstrate the ability to listen carefully, read and write analytically, and present complex information in a clear and concise manner to different groups.</p> <p><b>PO:2</b> Critical thinking: Capability to apply analytic thought to a body of knowledge; analyse and evaluate evidence, arguments, claims, beliefs on the basis of empirical evidence; identify relevant assumptions or implications; formulate coherent arguments; critically evaluate practices, policies and theories by following scientific approach to knowledge development.</p> <p><b>PO:3</b> Problem solving: Capacity to extrapolate from what one has learned and apply their competencies to solve different kinds of non-familiar problems, rather than replicate curriculum content knowledge; and apply one's learning to real life situations.</p> <p><b>PO:4</b> Analytical reasoning: Ability to evaluate the reliability and relevance of evidence; identify logical flaws and holes in the arguments of others; analyse and synthesize data from a variety of sources; draw valid conclusions and support them with evidence and examples and addressing opposing viewpoints.</p> <p><b>PO:5</b> Research-related skills: A sense of inquiry and capability for asking relevant/appropriate questions, problematizing, synthesizing, and articulating; Ability to recognize cause-and-effect relationships, define problems, formulate hypotheses, test hypotheses, analyze, interpret and draw conclusions from data, establish hypotheses, predict cause-and-effect relationships; ability to plan, execute and report the results of an experiment or investigation.</p> <p><b>PO:6</b> Cooperation/Teamwork: Ability to work effectively and respectfully with diverse teams; facilitate cooperative or coordinated effort on the part of a group, and act together as a group or a team in the interests of a common cause and work efficiently as a member of a team.</p> <p><b>PO:7</b> Scientific reasoning: Ability to analyze, interpret and draw conclusions from quantitative/qualitative data; and critically evaluate ideas, evidence, and experiences from an open-minded and reasoned perspective.</p> <p><b>PO:8</b> Reflective thinking: Critical sensibility to lived experiences, with self-awareness and reflexivity of both self and society.</p> <p><b>PO:9</b> Information/digital literacy: Capability to use ICT in a variety of learning</p>

	<p>situations, demonstrate ability to access, evaluate, and use a variety of relevant information sources; and use appropriate software for analysis of data.</p> <p><b>PO:10</b> Self-directed learning: Ability to work independently, identify appropriate resources required for a project, and manage a project through to completion. Multicultural competence: Possess knowledge of the values and beliefs of multiple cultures and a global perspective; and capability to effectively engage in a multicultural society and interact respectfully with diverse groups.</p> <p><b>PO:11</b> Moral and ethical awareness/reasoning: Ability to embrace moral/ethical values in conducting one's life, formulate a position/argument about an ethical issue from multiple perspectives, and use ethical practices in all work. Capable of demonstrating the ability to identify ethical issues related to one's work avoid unethical behaviour such as fabrication, falsification or misrepresentation of data or committing plagiarism, not adhering to intellectual property rights; appreciating environmental and sustainability issues; and adopting objective, unbiased and truthful actions in all aspects of work.</p> <p><b>PO:12</b> Leadership readiness/qualities: Capability for mapping out the tasks of a team or an organization, and setting direction, formulating an inspiring vision, building a team who can help achieve the vision, motivating and inspiring team members to engage with that vision, and using management skills to guide people to the right destination, in a smooth and efficient way.</p> <p><b>PO:13</b> Lifelong learning: Ability to acquire knowledge and skills, including, learning how to learn", that are necessary for participating in learning activities throughout life, through self-paced and self-directed learning aimed at personal development, meeting economic, social and cultural objectives, and adapting to changing trades and demands of workplace through knowledge/skill development/reskilling.</p> <p><b>PO:14</b> Developing research knowledge and skill of data collection and enabling students in using sampling techniques</p> <p><b>PO:15</b> Developing the knowledge about the theories</p> <p><b>PO:16</b> Creating awareness about the changing environment and enhancing the critical thinking among the students.</p> <p><b>PO:17</b> Ensuring practical knowledge among students through field study.</p>
<a href="#">English Literature</a> <a href="#">Hindi Literature</a>	<p><b>PO:1</b> Communication Skills: Ability to express thoughts and ideas effectively in writing and orally; Communicate with others using appropriate media; confidently share one's views and express herself/himself; demonstrate the ability to listen carefully, read and write analytically, and present complex information in a clear and concise manner to different groups.</p> <p><b>PO:2</b> Critical thinking: Capability to apply analytic thought to a body of knowledge; analyse and evaluate evidence, arguments, claims, beliefs on the basis of empirical evidence; identify relevant assumptions or implications; formulate coherent arguments; critically evaluate practices, policies and theories by following scientific approach to knowledge development.</p>

**PO:3** Problem solving: Capacity to extrapolate from what one has learned and apply their competencies to solve different kinds of non-familiar problems, rather than replicate curriculum content knowledge; and apply one's learning to real life situations.

**PO:4** Analytical reasoning: Ability to evaluate the reliability and relevance of evidence; identify logical flaws and holes in the arguments of others; analyse and synthesize data from a variety of sources; draw valid conclusions and support them with evidence and examples and addressing opposing viewpoints.

**PO:5** Research-related skills: A sense of inquiry and capability for asking relevant/appropriate questions, problematizing, synthesizing and articulating; Ability to recognize cause-and-effect relationships, define problems, formulate hypotheses, test hypotheses, analyze, interpret and draw conclusions from data, establish hypotheses, predict cause-and-effect relationships; ability to plan, execute and report the results of an experiment or investigation.

**PO:6** Cooperation/Teamwork: Ability to work effectively and respectfully with diverse teams; facilitate cooperative or coordinated effort on the part of a group, and act together as a group or a team in the interests of a common cause and work efficiently as a member of a team.

**PO:7** Scientific reasoning: Ability to analyze, interpret and draw conclusions from quantitative/qualitative data; and critically evaluate ideas, evidence, and experiences from an open-minded and reasoned perspective.

**PO:8** Reflective thinking: Critical sensibility to lived experiences, with self-awareness and reflexivity of both self and society.

**PO:9** Information/digital literacy: Capability to use ICT in a variety of learning situations, demonstrate ability to access, evaluate, and use a variety of relevant information sources; and use appropriate software for analysis of data.

**PO:10** Self-directed learning: Ability to work independently, identify appropriate resources required for a project, and manage a project through to completion. Multicultural competence: Possess knowledge of the values and beliefs of multiple cultures and a global perspective; and capability to effectively engage in a multicultural society and interact respectfully with diverse groups.

**PO:11** Moral and ethical awareness/reasoning: Ability to embrace moral/ethical values in conducting one's life, formulate a position/argument about an ethical issue from multiple perspectives, and use ethical practices in all work. Capable of demonstrating the ability to identify ethical issues related to one's work avoid unethical behaviour such as fabrication, falsification or misrepresentation of data or committing plagiarism, not adhering to intellectual property rights; appreciating environmental and sustainability issues; and adopting objective, unbiased and truthful actions in all aspects of work.

**PO:12** Leadership readiness/qualities: Capability for mapping out the tasks of a team or an organization, and setting direction, formulating an inspiring vision, building a team who can help achieve the vision, motivating and inspiring team members to engage with that vision, and using management

	<p>skills to guide people to the right destination, in a smooth and efficient way.</p> <p><b>PO:13</b> Lifelong learning: Ability to acquire knowledge and skills, including, learning how to learn”, that are necessary for participating in learning activities throughout life, through self-paced and self-directed learning aimed at personal development, meeting economic, social and cultural objectives, and adapting to changing trades and demands of workplace through knowledge/skill development/reskilling.</p> <p><b>PO:14</b> Developing reading, writing, speaking and listening skills.</p> <p><b>PO:16</b> Availing the job opportunity in translation<b>PO:17</b> introduce the students for appreciation and critical analysis.</p> <p><b>PO:17</b> Creating an interest in literature.</p>
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## PROGRAMME SPECIFIC OUTCOMES AND COURSE OUTCOME

### PROGRAMME SPECIFIC OUTCOMES (PSO) For M.A. ECONOMICS

Sr. No.	On completing B.A. with Economics, the student will be able to:
PSO 1	impart in depth knowledge about economic theory regarding utilization and allocation of resources including labour, national resources and capital.
PSO 2	develop students understanding about market goods and services, their functions and how income is generated and distributed.
PSO 3	understand the in-depth knowledge in special field of their choice like Agriculture Economics, Financial Market, Development Economics, International Trade, Urban Economic etc.
PSO 4	understand economic theories and their relevance, econometrics, quantitative techniques and applied research in a wide variety of field within economics.
PSO 5	understand how the economy is influenced by economic policy, technological advances and demographic conditions

### COURSE OUTCOMES (COS): M.A. ECONOMICS

#### COURSE I : Micro-Economics And Analysis-I

Sr. No.	On completing the course, a student will be able to:
CO 1	understand the basic reasoning of economics.
CO 2	know about how various economic agents behave optimally given the scarce economic resources and other constraints.
CO 3	understand various economic issues and applied part of the economics.
CO 4	develop comprehensive knowledge of microeconomics will empower students to explain the social reality with better arguments and optimum solutions

#### COURSE II: Macro-Economics

Sr. No.	On completing the course, the student will be able to:
CO 1	explain the concept of opportunity costs, trade, of and benefits of economics.
CO 2	learn the concept of fiscal and monetary policies and their effect on economy.
CO 3	demonstrate the knowledge of laws of supply and demand and equilibrium.
CO 4	get a clear picture of circular flow model etc.
CO 5	develop confidence and ability to express a particular viewpoint.

#### COURSE III: Quantitative Methods

Sr. No.	On completing the course, a student will be able to:
CO 1	collect, analyze and interpret empirical data.
CO 2	have introductory ideas about statistical methods and tools that are essential for the analytical study of economics.

<b>CO 3</b>	have a better understanding about the quantitative aspects regarding research and economic analysis.
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#### **COURSE IV– PUBLIC ECONOMICS**

<b>Sr. No.</b>	<b>On completing the course, the student will be able to:</b>
<b>CO 1</b>	understand the use of taxes and public expenditure for promoting socially efficient resources, allocation, and a desirable income distribution.
<b>CO 2</b>	understand major policies and examples of issues currently on the political agenda
<b>CO 3</b>	explain the economics contents and trade-offs captured by the models.
<b>CO 4</b>	identify and analyze policy problems in public economies.
<b>CO 5</b>	discuss the assumptions, relevance, and limitations of the models.
<b>CO 6</b>	assess arguments appearing in the policy debate.

#### **COURSE V– MICRO-ECONOMICS AND ANALYSIS-II**

<b>Sr. No.</b>	<b>On completing the course, the student will be able to:</b>
<b>CO 1</b>	develop ideas of the basic characteristics of Indian economic potential on natural resources.
<b>CO 2</b>	understand the importance of causes and its impact on population growth and its distribution and relate them with economic development.
<b>CO 3</b>	understand the importance of planning undertaken by government of India.
<b>CO 4</b>	understand agriculture as a foundation of economic growth and development, analyze the progress and changing nature of agriculture sector and its contribution to Indian economy as a whole.

#### **COURSE VI– MONETARY ECONOMICS**

<b>Sr. No.</b>	<b>On completing the course, the student will be able to:</b>
<b>CO 1</b>	strengthen the understanding about money and monetary policies in India.
<b>CO 2</b>	understand Banking system in India, types of Banks, new trends in commercial banking.
<b>CO 3</b>	play remarkable role for growth of the countries all over the world which students understand in detail.
<b>CO 4</b>	understand inflation - measurement and types of inflation effects of inflation, relationship between inflation and unemployment.

#### **COURSE VII– RESEARCH METHODS**

<b>Sr. No.</b>	<b>On completing the course, the student will be able to:</b>
<b>CO 1</b>	understand the overall process of research study.
<b>CO 2</b>	understand the primary characteristics of quantitative and qualitative research.
<b>CO 3</b>	identify a research problem in a study.
<b>CO 4</b>	apply suitable statistical methods to research studies.
<b>CO 5</b>	execute sampling, collection, and preservation techniques.

**COURSE VIII: INTERNATIONAL ECONOMICS**

<b>Sr. No.</b>	<b>On completing the course, the student will be able to:</b>
<b>CO 1</b>	understand the models of supply and demand within the context of international trade theory analysis.
<b>CO 2</b>	interpret the new trade theories.
<b>CO 3</b>	understand liberalization of world trade and international trade.
<b>CO 4</b>	analyze exchange trade system.
<b>CO 5</b>	understand international monetary system etc.

**COURSE IX– HISTORY OF ECONOMIC THOUGHT**

<b>Sr. No.</b>	<b>On completing the course, the student will be able to:</b>
<b>CO 1</b>	recognize the socio-economic condition of the country.
<b>CO 2</b>	comprehend emerging paradigms and observation with its reason.
<b>CO 3</b>	learn historical aspects about economic thinkers.
<b>CO 4</b>	develop a strong sense of identity.
<b>CO 5</b>	describe and analyze national schools of mercantilism in their theory and practice.

**COURSE X: INDIAN FOREIGN TRADE AND INDIA'S INTERNATIONAL INSTITUTION**

<b>Sr. No.</b>	<b>On completing the course, the student will be able to:</b>
<b>CO 1</b>	understand foreign trade in India and government policies about foreign trade through which how government earns through excise duties.
<b>CO 2</b>	understand how to control the diplomatic relations between the countries.
<b>CO 3</b>	learn the composition of foreign trade.

**COURSE XI : LABOUR ECONOMICS (OPTIONAL)**

<b>Sr. No.</b>	<b>On completing the course, the student will be able to:</b>
<b>CO 1</b>	makes students aware of different theories on labour and employment from the point of view of economic research.
<b>CO 2</b>	provide a detailed analysis on the latest development of labour market in developing countries with reference to India.
<b>CO 3</b>	lay a special emphasis on informal sector and the problem of labour in India.
<b>CO 4</b>	identify relevant issues on economic research on the aspects of labour and development.

**COURSE XII :ENVIRONMENT ECONOMICS (OPTIONAL)**

<b>Sr. No.</b>	<b>On completing the course, the student will be able to:</b>
<b>CO 1</b>	become familiar with the debates on approaches on linkage between natural environment and human economy.
<b>CO 2</b>	know contemporary environmental problems.
<b>CO 3</b>	understand various methods of measurement of environmental resources.
<b>CO 4</b>	know the relation between environment, economic development, population

	growth, environmental law and their implementation.
<b>CO 5</b>	gain knowledge through various model failures environmental problem.

### **COURSE XIII – INDUSTRIAL ECONOMICS (OPTIONAL)**

<b>Sr. No.</b>	<b>On completing the course, the student will be able to:</b>
<b>CO 1</b>	deal with basic concepts of industry, market products, industrial location and industrial marketing.
<b>CO 2</b>	gain knowledge about the industrial development and employment chances created and highlights the inter linkages between industrialization and agriculture industrialization, productivity industrialization and foreign trade.
<b>CO 3</b>	list out the trend in industrial productivity, labour productivity in India and the quality control measures adopted.
<b>CO 4</b>	explain the role of industrial policy and financial matters with regards to the industrial sickness and capacity utilization in industry.
<b>CO 5</b>	know the reason for the industrial location and bring out the approaches for the development of backward districts.

### **COURSE XIV: ECONOMICS OF INSURANCE (OPTIONAL PAPER)**

<b>Sr. No.</b>	<b>On completing the course, the student will be able to:</b>
<b>CO 1</b>	understand the concepts and principles of insurance.
<b>CO 2</b>	know the various types of insurance and insurance business in India.
<b>CO 3</b>	become aware of insurance legislation in India.
<b>CO 4</b>	study economics enrich their knowledge on financial matters and management.
<b>CO 5</b>	analyze the tax system and GST etc.
<b>CO 6</b>	enable to understand the local body system in their living areas.

### **COURSE XV: ECONOMICS OF GROWTH AND DEVELOPMENT**

<b>Sr. No.</b>	<b>On completing the course, the student will be able to:</b>
<b>CO 1</b>	understand concept of growth and development, problem of underdeveloped nations.
<b>CO 2</b>	understand themes of growth - Ricardian, Marxial.
<b>CO 3</b>	understand Theory of unlimited supply of labour, themes of unbalanced growth.

### **COURSE XVI: INDIA'S ECONOMIC POLICIES AND ISSUES**

<b>Sr. No.</b>	<b>On completing the course, the student will be able to:</b>
<b>CO 1</b>	develop ideas of the basic characteristics of the Indian economy.
<b>CO 2</b>	understands the growth of business and lay policies to control trade cycle and development of strategies in India.
<b>CO 3</b>	understand the exact economic policies and issues of the country as well as the world.



**COURSE XVII : AGRICULTURAL ECONOMICS (OPTIONAL)**

<b>Sr. No.</b>	<b>On completing the course, the student will be able to:</b>
<b>CO 1</b>	understand basic economics concept, business decision making and agricultural and natural resource concept.
<b>CO 2</b>	understand economic decision making
<b>CO 3</b>	understand the important causes and impact of population growth and its distribution and relate them with economic development.

**COURSE XVIII: TOURISM ECONOMICS (OPTIONAL)**

<b>Sr. No.</b>	<b>On completing the course, the student will be able to:</b>
<b>CO 1</b>	get employment by setting up tourism industry by understanding tourism policies.
<b>CO 2</b>	learn to analyze the impact of tourism in the Indian economy.
<b>CO 3</b>	understand the functions of tourism finance department and tourism Development Corporation of India for tourism development in India.
<b>CO 4</b>	understand tourism policy and incentives as well.

**COURSE XIX: Regional Economics (Optional)**

<b>Sr. No.</b>	<b>On completing the course, the student will be able to:</b>
<b>CO 1</b>	understand regional economy through various analysis & theories: Von then theory, location theory of Hoover, Weber's theory of Industrial location etc.
<b>CO 2</b>	know about regional income, its components and estimation.
<b>CO 3</b>	understand the regional account, commodity flow and money flow analysis.

**COURSE XX: DEMOGRAPHY ECONOMICS (OPTIONAL)**

<b>Sr. No.</b>	<b>On completing the course, the student will be able to:</b>
<b>CO 1</b>	understand demography through various analyses: Malthusian, theory population growth optimum theory of population.
<b>CO 2</b>	understand demographic measurement like fertility and mortality rates, population education in India.
<b>CO 3</b>	understand the difference between internally displaced person, an asylum-seeker, and refugee.

## **PROGRAMME SPECIFIC OUTCOMES (PSO) For M.A. SOCIOLOGY**

After successful completion of the Programme, a student would have:

<b>PSO1:</b>	understood all the major concepts of society which helps the students to differentiate between common sense and sociological sense.
<b>PSO2:</b>	got introduced to important social problems and social issues
<b>PSO3:</b>	become familiar with the ideas of classical thinkers and philosophers
<b>PSO4:</b>	got detailed information about the history, structure, and problems of rural, urban and tribal society.
<b>PSO 5:</b>	become familiar with the need and problems of social institutions like family, marriage, kinship.
<b>PSO 6:</b>	become knowledgeable in social research and social survey and its method in social reconstruction.
<b>PSO 7:</b>	understood the various aspects of Indian Penal Code for crime prevention.
<b>PSO 8:</b>	employment opportunities in social sectors.

## **COURSE OUTCOMES (COS): M.A. SOCIOLOGY**

### **Course I : CLASSICAL SOCIOLOGICAL TRADITION:**

**After successful completion of the Course, a student will be able to:**

<b>CO1:</b>	get acquainted with the origins of sociology and its socioeconomic history.
<b>CO2:</b>	understand the context of the history of the development of social thought, Auguste Comte and the contribution of the revolution of issues in the Renaissance.
<b>CO3:</b>	become aware of the ideas of Karl Marks in the present context of social change.
<b>CO4:</b>	become familiar with the intellectual background of an ideas like Max Weber.
<b>CO5:</b>	understand the contribution of Wilfrado and Pareto in the society.

### **Course II: METHODOLOGY OF SOCIAL RESEARCH:**

After successful completion of the Course, a student will be able to:

<b>CO1 :</b>	get acquainted with the methods of Social Research.
<b>CO2 :</b>	get acquainted with the scientific approach of Social Research.
<b>CO3 :</b>	know the methods of investigation and reasoning.
<b>CO4 :</b>	understand quantitative and qualitative methods.
<b>CO5 :</b>	use Statistics in Social Research.

**Paper-III RURAL SOCIETY IN INDIA:**

After successful completion of the Course, a student will be able to:

<b>CO1:</b>	know the characteristics of rural society.
<b>CO2:</b>	understand the structure of rural social institutions.
<b>CO3:</b>	understand farmer relationship in rural India.
<b>CO4:</b>	become familiar with rural political life.
<b>CO5:</b>	understand the problems of the villagers.

**Paper-IV URBAN SOCIETY IN INDIA:**

After successful completion of the Course, a student will be able to:

<b>CO1:</b>	understand the importance of urban environment and urban studies.
<b>CO2:</b>	learn about the emerging trends of urban society in India.
<b>CO3:</b>	understand the urban social structure and its problems.
<b>CO4:</b>	understand the importance of information technology in urban educational centers and urban development.
<b>CO5:</b>	understand about town planning and city management.

**Course V: SOCIOLOGY OF KINSHIP, MARRIAGE AND FAMILY:**

After successful completion of the Course, a student will be able to:

<b>CO 1:</b>	know the concept types and categories of kinship.
<b>CO2:</b>	know the concept of marriage, the methods of selection of life partner and the sociological importance of marriage.
<b>CO3:</b>	understand “Family as a Universal concept”.
<b>CO4:</b>	get information about kinship marriage and family problems.
<b>CO5:</b>	know the changed attitudes of kinship, family, and marriage.

**Course VI: INDIAN SOCIETY AND CULTURE:**

After successful completion of the Course, a student will be able to:

<b>CO1:</b>	get acquainted with the elements of Indian society such as demographics, religious, linguistic, regional diversity.
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<b>CO2:</b>	know and understand Indian culture.
<b>CO3:</b>	become familiar with the Indian Social Organization and its institutions.
<b>CO4:</b>	get information about the culture of rural, urban, and tribal groups.
<b>CO5:</b>	get acquainted with the rural studies conducted by the Indian sociologist.

#### **Course VII: SOCIOLOGICAL ESSAY:**

After successful completion of the Course, a student will be able to:

<b>CO1 :</b>	get detailed information on women empowerment.
<b>CO2 :</b>	understand the social problems like domestic violence, child labor.
<b>CO3 :</b>	get information about NGOs and Self-Help Groups.
<b>CO4 :</b>	become familiar with the various dimensions of rural development.
<b>CO5 :</b>	become familiar with the rules and principles of social change.

#### **Course VIII : CRIMINOLOGY:**

After successful completion of the Course, a student will be able to:

<b>CO1:</b>	become familiar with the legal and sociological concept of crime.
<b>CO2:</b>	become familiar with the principles and types of crime.
<b>CO3:</b>	get information about the remedial programs of the offender.
<b>CO4:</b>	understand the concept and principles of punishment.
<b>CO5:</b>	become familiar with the concept of a captive planet.

#### **Course IX: THEORETICAL PERSPECTIVE IN SOCIOLOGY:**

After successful completion of the Course, a student will be able to:

<b>CO1:</b>	understand the formation process and nature of sociological theory.
<b>CO2:</b>	become familiar with social structure and social anomaly.
<b>CO3:</b>	get to know the principles of functionalism.
<b>CO4:</b>	become familiar with dialectical ideologies.
<b>CO5:</b>	become familiar with the inter-actionism and modern thought stream of sociological theory.

#### **Course X: SOCIOLOGY OF CHANGE AND DEVELOPMENT:**

After successful completion of the Course, a student will be able to:

<b>CO1:</b>	understand the meaning of social change.
<b>CO2:</b>	understand the social process.
<b>CO3:</b>	become familiar with the approach and strategy of social development.
<b>CO4:</b>	become familiar with the role of NGOs in the process of development.
<b>CO5:</b>	know the impact of revolution in information technology.

#### **Course XI: POLITICAL SOCIOLOGY:**

After successful completion of the Course, a student will be able to:

<b>CO1:</b>	know about political participation in society.
<b>CO2:</b>	understand the political systems.
<b>CO3:</b>	know the importance of public opinion in democracy.
<b>CO4:</b>	understand the concept of bureaucracy.
<b>CO5:</b>	become familiar with the political processes of India.

#### **Paper-XII: SOCIAL DEMOGRAPHY:**

After successful completion of the Course, a student will be able to:

<b>CO1:</b>	get acquainted with the structure and policies of the population of India.
<b>CO2:</b>	understand the census policy of the country.
<b>CO3:</b>	understand the principles of population growth.
<b>CO4:</b>	understand the schemes of family welfare in India.
<b>CO5:</b>	understand the government policies of population control in India.

## **PROGRAMME SPECIFIC OUTCOMES (PSO) For M.A. GEOGRAPHY**

<b>PSO1</b>	The courses of this program are helpful to the student for extract the knowledge of geographical aspects at local, regional, national and global level. e.g., topography, climate oceanic activities etc..
<b>PSO2</b>	Establish the position of Geography as a subject and its importance and interrelationships that reiterate and validate the man-environment relationship.
<b>PSO3</b>	Computer-based techniques (RS & GIS) are incorporated in the syllabus which prepares the students for further analytical studies
<b>PSO4</b>	In the course of field surveys, students acquire a greater understanding of the socio-economic and cultural dimensions of the populations with greater focus on marginalized section of society.
<b>PSO5</b>	Assistance is given to students in preparing for various competitive exams like NET, SET, SSC and Public Service Commission etc.

## **COURSE OUTCOMES (COS): M.A. GEOGRAPHY**

### **Course I: GEOMORPHOLOGY**

**After successful completion of the Course, a student will be able to:**

<b>CO1.</b>	understand the effect of rotation of revolution the Earth
<b>CO2.</b>	understand the work of internal and external forces and their associated Landforms.
<b>CO3.</b>	know the importance of longitudes & latitudes
<b>CO4.</b>	study the erosional and depositional land forms of Rivers and Sea Waves.
<b>CO5.</b>	understand Theory regarding of Origin of Continents and oceans

### **Course II : ECONOMICS GEOGRAPHY**

**After successful completion of the Course, a student will be able to:**

<b>CO1.</b>	understand about the Nature and Scope, approaches of Economic Geography and recent trends of economic geography.
<b>CO2.</b>	understand about the basic Economic Processes- Production, Exchange, Consumption and it applications
<b>CO3.</b>	understand the fundamental theories in economic geography.
<b>CO4.</b>	review, understand and apply the modes of economics development by various models.
<b>CO5.</b>	compare the economic environment and economic development in the world.

<b>CO6.</b>	understand the economies scale, transportation and communication and nature and role of international trade in economic development of India
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### **Course III : GEOGRAPHY OF INDIA**

**After successful completion of the Course, a student will be able to:**

<b>CO1.</b>	understand the about the physiographic division of India.
<b>CO2.</b>	understand the India Drainage system of India Rivers.
<b>CO3.</b>	understand the climatic variation in India and climatic region of India.
<b>CO4.</b>	examine and understand the types of vegetation of India.
<b>CO5.</b>	understand the variation in industrial development in India.
<b>CO6.</b>	examine and understand the developed and underdeveloped states in India.

### **Paper-IV- EVOLUTION OF GEOGRAPHICAL THOUGHT**

**After successful completion of the Course, a student will be able to:**

<b>CO1.</b>	understand the historical development of geographical thought according to Greek, Roman, Indian, German, French, British and American school.
<b>CO2.</b>	understand the dualisms in geography such as determinism and possibilism, systematic Vs regional and physical Vs human geography.
<b>CO3.</b>	understand recent trends, scientific methods, quantitative revolution and computer Application in geography.
<b>CO4.</b>	understand the definition, need, and signification of applied geography
<b>CO5.</b>	acquaint students with the philosophers of different schools of thought that have contributed in the development of geography as a branch of knowledge.

### **Course V : Practical-I**

**After successful completion of the Course, a student will be able to:**

<b>CO1.</b>	have indepth knowledge about concept of map projections.
<b>CO2.</b>	draw map projection by different methods.
<b>CO3.</b>	practically implement of cylindrical projection.
<b>CO4.</b>	understand about Indian topographical sheets.
<b>CO5.</b>	learn how to implement mean mode median in geographical area.

## **Course VI : PRACTICAL-II**

**After successful completion of the Course, a student will be able to:**

<b>CO1.</b>	Know about relief profiles and understand various landforms.
<b>CO2.</b>	Practically implement of various slope analysis methods.
<b>CO3.</b>	have knowledge about different curve and maps.
<b>CO4.</b>	prepare different diagram and graphs.
<b>CO5.</b>	know about geological maps.

## **Course VII : CLIMATOLOGY**

**After successful completion of the Course, a student will be able to:**

<b>CO1.</b>	understand the importance of Atmosphere
<b>CO2.</b>	understand heat balance.
<b>CO3.</b>	understand the types of winds
<b>CO4.</b>	understand the structure, composition of Atmosphere.
<b>CO5.</b>	understand weather phenomena winds, humidity and precipitation

## **Course VIII : RESOURCE MANAGEMENT**

**After successful completion of the Course, a student will be able to:**

<b>CO1.</b>	understand the nature and classification of resources
<b>CO2.</b>	learn about the optimum use of resources.
<b>CO3.</b>	understand the importance of reuse, reproduce and recycle of resources.
<b>CO4.</b>	aware the need of conservation of resources.
<b>CO5.</b>	analyse the use and miss use of resources in India and Global Scenario.

## **Course IX : GEOGRAPHY OF INDIA: ECONOMY & REGIONS**

**After successful completion of the Course, a student will be able to:**

<b>CO1.</b>	understand the Indian economy and impact of different aspects.
<b>CO2.</b>	have knowledge about the technology development in Indian Agriculture.



<b>CO3.</b>	understand the Industrial Development in India and regional distribution of various industries.
<b>CO4.</b>	know about the transport and trade development in India.
<b>CO5.</b>	understand the regional division of India under the various geographers.

### **Course X : GEOGRAPHY OF ENVIRONMENT**

**After successful completion of the Course, a student will be able to:**

<b>CO1.</b>	gain knowledge about concept, scope of environmental geography and components of environment.
<b>CO2.</b>	detailed exposure of human – environment relationship.
<b>CO3.</b>	understand the concept of Ecosystem and its Function.
<b>CO4.</b>	have in-depth knowledge of environmental issues in tropical, temperate and polar ecosystems.
<b>CO5.</b>	To understand the Environmental hazard and know causes of pollutions

### **Course XI : PRACTICAL-I**

<b>CO1.</b>	understand map through projections like; polar, equatorial and oblique.
<b>CO2.</b>	practical implementation of simple interrupted sinusoidal by graphical method.
<b>CO3.</b>	knowledge about computer cartography.
<b>CO4.</b>	learn concept about weather maps.
<b>CO5.</b>	knowledge about measures inequalities.

### **Course XII : PRACTICAL-II**

**After successful completion of the Course, a student will be able to:**

<b>CO1.</b>	know Principles and types of surveying.
<b>CO2.</b>	measure the linear distance between two points above the earth's surface.
<b>CO3.</b>	have knowledge about plane table survey
<b>CO4.</b>	have plane table survey with various research methods.
<b>CO5.</b>	Understand Surveying Methods

### **Course XIII : OCEANOGRAPHY**

**After successful completion of the Course, a student will be able to:**

<b>CO1.</b>	understand the meaning, nature and scope, modern trends in Oceanography.
<b>CO2.</b>	understand the ocean floor and relief of the ocean bottom.
<b>CO3.</b>	understand the properties like temperature, density, salinity of ocean water.
<b>CO4.</b>	understand the characteristics and properties of factors affecting on formation of sea waves.
<b>CO5.</b>	understand the tides, tide generating forces, types of tides and tidal effects in coastal areas.

### **Course XIV: AGRICULTURE GEOGRAPHY**

<b>CO1.</b>	understand about the introduction to agriculture, nature, scope, significance and Development of agriculture geography, study approaches applied in agriculture.
<b>CO2.</b>	understand the influence of physical, Economic and Technological factors on agriculture patterns.
<b>CO3.</b>	understand the agricultural system its meaning and concept, Whittlesey's classification of agricultural system, types of agricultural, study the types of agricultural in respect of area, salient features and their problems.
<b>CO 4.</b>	understand the agricultural regionalization and modes in agricultural geography and their classification of agricultural models and some theories.
<b>CO5.</b>	understand definition and characteristics of arid and semi-arid regions and study about droughts and famines, role of irrigation and dry farming.

### **Course XV: GEOGRAPHY OF TOURISM**

**After successful completion of the Course, a student will be able to:**

<b>CO1.</b>	understand about the tourism influencing factors: historical, natural, socialcultural and economic.
<b>CO2.</b>	have knowledge about tourism and its motivating factors for pilgrimages, leisure, recreation, elements.
<b>CO3.</b>	understand the Tourism types: eco-ethonocoastal and adventure tourism, national and international tourism, globalization and tourism.

<b>CO4.</b>	Have knowledge about factors for tourism-attraction, evolution of tourism, promotion of tourism, case studies from in India.
<b>CO5.</b>	understand the environmental laws and tourism-current trends, spatial and recent changes, Tourism circuits-short and longer, accommodation and supplementary accommodation other facility, Indian hotel industry.

## **Course XVI : URBAN GEOGRAPHY**

**After successful completion of the Course, a student will be able to:**

<b>CO1.</b>	understand the nature, scope, approaches, and recent trends in Urban Geography.
<b>CO2.</b>	trace the origin of urban places over time and analyse the factors, stages, and characteristics of these places
<b>CO3.</b>	analyze the theories of urban evolution and growth, Hierarchy of urban settlements.
<b>CO4.</b>	understand the concept of urban hierarchies
<b>CO5.</b>	understand the patterns and trends of urbanization in India.

## **Course XVII: PRACTICAL-I**

**After successful completion of the Course, a student will be able to:**

<b>CO1.</b>	Make base map of using survey instruments.
<b>CO2.</b>	have knowledge about prismatic compass survey.
<b>CO3</b>	practically implement of prismatic compass survey by various methods like Bowditch method, resection method etc.
<b>CO4.</b>	carry out land use survey.
<b>CO5.</b>	have knowledge about traffic flow survey.

## **Course XVIII : PRACTICAL-II**

**After successful completion of the Course, a student will be able to:**

<b>CO1.</b>	know the method of data collection.
<b>CO2.</b>	understand the Sampling Technique and Method of Sampling.
<b>CO3.</b>	know how to prepare questionnaire and interview schedule

<b>CO4.</b>	understand Statical Analysis.
<b>CO5.</b>	understanding about how to prepare Socio-Economic Survey.

### **Course XIX : RESEARCH METHEDOLOGY IN GEOGRAPHY**

**After successful completion of the Course, a student will be able to:**

<b>CO1.</b>	have introductory knowledge about research, motivation in research, types of research, significance of research, research process and criteria of good research.
<b>CO2.</b>	understand the research problems, selecting research problems, literature review and to study the hypothesis, its types, sources, formation of hypothesis and utility of hypothesis in scientific research.
<b>CO3.</b>	understand the research design, need, features, basic principle and developing of research plan, and sampling design and its basic types, steps, characteristics of sampling design.
<b>CO4.</b>	knowledge about type's data and methods of data collection and study the processing and analysis of data using different statistical methods.
<b>CO5.</b>	understand the interpretation and report writing, techniques, precaution of interpretation, layout of research report, types of reports and oral presentation mechanics of writing a research report.

### **Course XX: GEOGRAPHY OF POPULATION**

**After successful completion of the Course, a student will be able to:**

<b>CO1.</b>	understand the Nature and Concept of Population Geography and development of population geography as a field of specialization.
<b>CO2.</b>	understand the population distribution, growth and density of population.
<b>CO3.</b>	know the Population Composition in terms of Age, Sex, etc.
<b>CO4.</b>	understand the Concept of Mortality and Fertility and Population Dynamics.
<b>CO5.</b>	understand the Concept of Population Dynamics and Concept of Over, Optimum Population.

## **Course XXI : GEOGRAPHY OF MANUFACTURING**

**After successful completion of the Course, a student will be able to:**

<b>CO1.</b>	basic knowledge of manufacturing like centralization and decentralization of industrial enterprises
<b>CO2.</b>	learn about models of industrial location, Weber, losch, isard and hoover.
<b>CO3.</b>	understand distribution and spatial pattern of manufacturing industries
<b>CO4.</b>	have knowledge about major industrial regions of U.S.A Asia and Europe
<b>CO5.</b>	know how to manufacture industries effect environment and health.

## **Course XXII : POLITICAL GEOGRAPHY**

**After successful completion of the Course, a student will be able to:**

<b>CO1.</b>	understand elements of political Geography.
<b>CO2.</b>	identify and quote the various schools of thoughts in Political Geography.
<b>CO3.</b>	interpret the elements and structure of the state.
<b>CO4.</b>	apprise and compare different frontiers and boundaries
<b>CO5.</b>	arrange the places of strategic importance in the world and specify the current issues in Political Geography

## **Course : XXIII : PRACTICAL-I**

**After successful completion of the Course, a student will be able to:**

<b>CO1.</b>	have basic knowledge of remote sensing technique.
<b>CO2.</b>	have an understanding of Arial Photography.
<b>CO3.</b>	prepare Map through Geographical Information tools.
<b>CO4.</b>	know about global positioning system.
<b>CO5.</b>	know how to prepare a geographical tour report.

## **Course XXIV : PRACTICAL-II**

**After successful completion of the Course, a student will be able to:**

<b>CO1.</b>	practically implement Indian tangent clinometer survey
<b>CO2.</b>	have knowledge about Abney level survey

<b>C03.</b>	have knowledge about Dumpy level
<b>C04.</b>	have knowledge about Sextant survey
<b>C05.</b>	practically implement Theodolite survey

## **PROGRAMME SPECIFIC OUTCOMES (PSO) For M.A. PUBLIC ADMINISTRATION**

After completing the Two Year (4 Semesters) M.A. Public Administration Programme a student would have:

<b>PSO1:</b>	acquired an in-depth understanding of the subject.
<b>PSO2:</b>	acquainted with the knowledge of the overall system of public governance, policy-formation, and its implementation.
<b>PSO3:</b>	acquired the ability to analyze, synthesize, think critically, and solve the problem that come in the way of implementation of various policies.
<b>PSO4:</b>	learnt about public welfare as the underlying principle of public policies and their implementations.
<b>PSO5:</b>	learnt the fundamentals of preparing public budget and administration of finance.
<b>PSO6:</b>	acquired the ability to effectively communicate and productively interact with diverse teams and communities.

## **COURSE OUTCOMES (COS): M.A. PUBLIC ADMINISTRATION**

### **Course – I : Theory of Public Administration**

After completing this Course, a student will be able to:

<b>CO1:</b>	understand the nature and scope of Public Administration.
<b>CO2:</b>	learnt the various approaches to the study of Public Administration and its application in various fields.
<b>CO3:</b>	comprehend the changing paradigms of Public Administration.
<b>CO4:</b>	understand the administrative theories and concepts from multiple perspectives to make sense of administrative practices.
<b>CO5:</b>	understand the relation of Public Administration as a discipline with other disciplines like Science and Technology, Psychology, Geography, Sociology, Political Science, Economics etc.

### **Course – II :**

After completing this Course, a student would have:

<b>CO1:</b>	understood various thinkers and their contribution in the field.
<b>CO2:</b>	learnt about the studies and works of various administrative thinkers.
<b>CO3:</b>	acquired knowledge about historical development of Public Administration in relation to major thinkers in the field.
<b>CO4:</b>	acquired the knowledge of implementation and the effects of public policies and laws.
<b>CO5:</b>	learnt about the causes of the rise of New Human Relation theory and its contribution to the field.

### **Course – III: Principles of Organization**

After completing this Course, a student would have:

<b>CO1:</b>	acquainted with the principles of definition of Organization, its principles, types, features, merits and demerits.
<b>CO2:</b>	acquainted with the structure of Organization, and its various functions.
<b>CO3:</b>	learnt about forms of Public Organizations.
<b>CO4:</b>	learnt about relation among various entities and their functions and methods.

### **Course – IV: Financial Administration-I**

After completing this Course, a student would have:

<b>CO1:</b>	the knowledge about the financial administration in various types of economy viz., Capitalist, Socialist, Marxist and Mixed Economy and their merits and demerits.
<b>CO2:</b>	acquired the knowledge of Indian Economy, its salient features Monetary policy and fiscal policy, about the role, structure and functions of Reserve Bank of India.
<b>CO3:</b>	learnt about resource mobilization, Taxation and Tax resources, Indian Tax system and various aspects of public finance
<b>CO4:</b>	acquired the knowledge about budget and its basic principles and types.
<b>CO5:</b>	learnt about the role of budgeting process in the functioning of the government.

### **Course – V: Financial Administration-II**

On successful completion of the Course, a student would have gained knowledge about:

<b>CO1:</b>	Public Expenditure and Difference between Public and Private expenditure, their features and importance.
<b>CO2:</b>	Parliamentary Control, the role of Public Accounts Committee, Comptroller & Auditor General of India, and the role of Controller General of Accounts.
<b>CO3:</b>	Concepts and Methods of National Income: GDP, GNP, Personal Income, and concept and importance of Recession etc.
<b>CO4:</b>	Public banking system: Nationalized Banks, Private Banks, New Economic Policy: LPG and related issues, FDI etc.
<b>CO5:</b>	National Financial Aid Agencies like NABARD, NRB, International Financial Assistance like IMF, WTO, IBRD and their impacts on Indian economy.

### **Course – VI : Administrative Behaviour**

On successful completion of the Course, a student would have gained knowledge about:

<b>CO1:</b>	The Decision-making process and its various stages. Herbert Simon's Decision-Making model etc.
<b>CO2:</b>	Definitions and theories of Communication and Motivation.



<b>CO3:</b>	Theory of Hierarchy, X & Y theories, Two Factor theory by different theoreticians and their contributions.
<b>CO4:</b>	Leadership and its qualities.
<b>CO5:</b>	Concept and importance of Participative Management and the contributions of different theoreticians in this field.

### **Course VII: Personnel Administration**

On successful completion of the Course, a student would have gained knowledge about:

<b>CO1:</b>	the importance of Human Resource Development and Personnel Administration and types of Recruitment.
<b>CO2:</b>	Training, Promotion, and Incentives
<b>CO3:</b>	Classification of Positions including in the Central and State Civil Services
<b>CO4:</b>	Industrial Relations and Labour Relations
<b>CO4:</b>	Redressal Mechanism, Employer-Employee Relationships, Significance of Staff Association etc.
<b>CO5:</b>	Administrative Ethics, the concept of committed bureaucracy, and the relationship between political positions and the bureaucracy.

### **Course VIII: Indian Administration (Union Government)**

On successful completion of the Course, a student would have gained knowledge about:

<b>CO1:</b>	Historical evolution and socio-economic, political, cultural and global context of Indian Administration.
<b>CO2:</b>	Multi-dimensional problems and processes of Indian Administration.
<b>CO3:</b>	Civil Services and Revenue Administration and Features of Indian Constitution vis-a-vis Civil Administration.
<b>CO4:</b>	basic concepts and provisions of Indian Constitution.
<b>CO5:</b>	Indian Parliamentary System and the powers vested with the Executive and its functions.

### **Course -IX : State Administration (with Reference to MP)**

On successful completion of the Course, a student would have gained knowledge about:

<b>CO1:</b>	the structure of the State Legislature, powers and functions of various offices such as that of the Governor, Chief Minister and Council of Ministers.
<b>CO2:</b>	State Cabinet and its Importance, Appointment of Lok Ayukta, its functions and powers
<b>CO3:</b>	the role and functions of Finance Commission, Planning Commission and National Development Council.
<b>CO4:</b>	powers and functions of State Public Service Commission. State Civil Services.
<b>CO5:</b>	powers and Functions of Divisional Commissioners, Collectors and Superintendents of Police etc.

### **Course –X: - Development Administration**

On successful completion of the Course, a student would have gained knowledge about:

<b>CO1:</b>	the basic concepts and scope of Development Administration.
<b>CO2:</b>	role of State Bureaucracy and its relationship with political positions.
<b>CO3:</b>	people's Participation and its importance in empowering the Civil Society.
<b>CO4:</b>	Law and Order Management, Good Governance and E-Governance.
<b>CO5:</b>	the various aspects of Administrative Reforms.

### **Course –XI : Comparative Public Administration**

On successful completion of the Course, a student would have gained knowledge about:

<b>CO1:</b>	the need for comparative study of Public Administration. Differences in the characteristics of Public Administration in the Developing and Developed countries.
<b>CO2:</b>	various models for Comparative study of Public Administration.
<b>CO3:</b>	Political and Administrative systems of various countries.
<b>CO4:</b>	Similarities and Differences in the Administrative systems of various countries and that of India.
<b>CO5:</b>	The basic principles and features of the Legislative, Executive and Judicial Control Mechanisms over Public Administration in Great Britain, USA and India.

### **Course - 12. Administrative Law**

On successful completion of the Course, a student would have gained knowledge about:

<b>CO1:</b>	The concepts, definitions the need for Administrative Law and its growth in Indian Administrative system.
<b>CO2:</b>	The theory of Separation of Power, Delegated Legislation and the parliamentary control over it.
<b>CO3:</b>	Administrative Adjudication and its importance and the various Tribunals functioning as adjudicators in Indian Administrative systems.
<b>CO4:</b>	The fundamental aspects of the Judicial System in India and the functions of various Courts and the meanings of various judicial terminologies like writs, prohibition, Habeas Corpus, Injunction etc.
<b>CO5:</b>	The meaning of Judicial Activism, PLI, RTI Act and their various provisions.

### **Course – XIII: Public Enterprises in India**

On successful completion of the Course, a student would have gained knowledge about:

<b>CO1:</b>	Two types of enterprises viz., Public and Private and their similarities and differences and their importance in various sectors.
<b>CO2:</b>	Various types of Corporations, Boards and their compositions and functions of the Management Boards.
<b>CO3:</b>	Personnel management in Public Enterprises, Industrial relations, Financing of Public Enterprises and government share, the functioning of BSE and NSE, SEBI, IDBI, SIDBI etc

CO4:	The governmental control over Public Enterprises, the role of CAG of India and the audit systems of PSUs.
CO5:	The contemporary problems facing the PSUs, public accountability, corruption, the Disinvestment and Privatisation etc.

#### **Course – XIV: Rural and Urban Local Government**

On successful completion of the Course, a student would have gained knowledge about:

<b>CO1:</b>	Democratic decentralization and its concepts, Panchayati Raj and its historical perspectives since Independence and the recommendations of various Committees constituted by the government.
<b>CO2:</b>	The various tenets of Panchayati Raj in Madhya Pradesh and its functions and budgeting.
<b>CO3:</b>	The functioning of Urban Local government and its history in India, and the budgetary process in the Municipal Corporations and Municipalities.
<b>CO4:</b>	The system of recruitment and Personnel management in the local bodies and the role of the District Collectors.
<b>CO5:</b>	The relation and coordination between local self-government and the State government and its various agencies.

#### **Course –XV: Public Welfare Administration**

On successful completion of the Course, a student would have gained knowledge about:

<b>CO1:</b>	The concept of Social Welfare Administration and its relevance.
<b>CO2:</b>	Significance of Human Empowerment and Human Rights, Reservation policies and major social sectors like Health, Education and Employment.
<b>CO3:</b>	The role of State Government in Social Justice Administration and its various agencies for the purpose.
<b>CO4:</b>	The role and functions of NHRC and SHRC, the working of the NGOS and Voluntary organizations.
<b>CO5:</b>	The role and workings of Cooperative Societies and the Socio-Economic issues of LPG and Urbanizations.

#### **Course – XVI: Research Methodology**

On successful completion of the Course, a student would have gained knowledge about:

<b>CO1:</b>	The meaning and nature of Social Research and its significance and stages in relation to Public Administration.
<b>CO2:</b>	Research methodologies in Social research and the merits and demerits of various methods like assumptions, hypothesis making and testing.
<b>CO3:</b>	Primary and secondary data and the techniques of data collection.
<b>CO4:</b>	Various aspects of Survey method.
<b>CO5:</b>	The technique of Report Writing and use of computers in Social Research.

## PROGRAMME SPECIFIC OUTCOMES (PSO) For M.A. SOCIAL WORK

After completing the Two Year (4 Semesters) M.A. Social Work Programme a student would have:

<b>PSO1:</b>	gained education and training in professional social work in order to provide manpower in social welfare, development and allied field capable of working.
<b>PSO2:</b>	developed knowledge, skills, attitudes, and values appropriate to the practices of social work profession.
<b>PSO3:</b>	developed creative thinking and ability to apply theoretical knowledge in practice of social work.
<b>PSO4:</b>	learnt interdisciplinary approach for better understanding of social problem, situations, and issues of development.
<b>PSO5:</b>	developed knowledge of survey, research, case work, group work and counselling.

## COURSE OUTCOMES (COS): M.A. SOCIAL WORK

### Course –I: Introduction to social work

After successful completion of the Course in introduction to social work, the student would have:

<b>CO1:</b>	learnt about Emergence of Social Work from Charity to Social Work.
<b>CO2:</b>	knowledge about History of various countries.
<b>CO3:</b>	learnt about social welfare, welfare state and Terms related to social work.
<b>CO4:</b>	learnt about Field of social work in india, Tribal,Rural and Urban Community Development.
<b>CO5:</b>	learnt about Labour Welfare, Families and Child Welfare, Medical and Psychiatric Social Work,Welfare of Physically, Mentally and Socially Handicapped.
<b>CO6:</b>	learnt about Social Work for Aged, Social Work with Drug Abuse, Criminals, Deprived Population.

### Course –II: Sociology for social work

After successful completion of the Course in Sociology for social work, the student would have:

<b>CO1:</b>	known the Concept and Meaning of Society, Association, Institution, Community, Status and Role.
<b>CO2:</b>	known about Culture, Traditions, Customs, Norms, Values and Folkways, Social Control.
<b>CO3:</b>	learnt about Social Institutions: Family, Marriage, Kinship, Religion, Social Groups.
<b>CO4:</b>	known about Field of social work in india, Tribal,Rural and Urban Community Development.
<b>CO5:</b>	known about Composition of Indian Society,Social Classification (Rural & Urban), Stratification in India (caste & class ).
<b>CO6:</b>	learnt about Social Change: Concept,Theories (Tradition, Modernity, Liberalization, Privatization and Globalization), Dominant Social Movement& Reformers.

### **Course –III: Human Growth and Development**

After successful completion of the Course in Human Growth and Development, the student would have:

<b>CO1:</b>	learnt about Determinants of Human Behaviour : Heredity and Environment, Life span Approach to Human Development, Pre conception, Conception and Post-natal Situations.
<b>CO2:</b>	knowledge about Infancy and Babyhood, Childhood, Puberty: Development Tasks, Characteristics and Hazards.
<b>CO3:</b>	learnt about Adolescence, Adulthood: Development Tasks, Characteristics and Hazards.
<b>CO4:</b>	knowledge of about Middle age, old age: Development Tasks, Characteristics and Hazards.
<b>CO5:</b>	knowledge of about Human Behaviour, Dynamics of Human Behaviour, Basic Human Needs, Different Theories of Human Behaviour

### **Course IV: Social work profession: methods and strategies**

After successful completion of the Course in Social work profession: methods and strategies, the student would have:

<b>CO1:</b>	the Meaning, Nature, Scope, Objectives, Values and Principles of Social Work, Social Work as a Profession, Professional Ethic, Integrated Approach to Social Work, and Professional Organizations.
<b>CO2:</b>	knowledge about Social Case Work, Components and Process of Working with Individuals, Historical Development & Current Application.
<b>CO3:</b>	learnt about Tools of Social Case Work, Various Models, Application of Social Case Work, Role of Social Case Worker.
<b>CO4:</b>	knowledge about Social Group Work: Nature and Definition, Purpose and Principles of Working with Groups, Group Dynamics, Types of Group, Group Formations, Group Cohesiveness, Historical Development & Current application.
<b>CO5:</b>	knowledge about Determination, Phases of Group Work and Recording, Role of Group Worker: Enabler, Guide, Facilitator and Therapist, Application of Social Work with Groups in various settings and its limitations (Hospital, School & Family Welfare etc).

### **Course –V: Basics of Social Science Research**

After successful completion of the Course in Basics of Social Science Research, the student would have:

<b>CO1:</b>	learnt about Social Research, Steps in social research, Need for and importance of social Research.
<b>CO2:</b>	knowledge about Scientific method, Social Survey: Process and importance of social survey.
<b>CO3:</b>	learnt about Difference between social Research and Social Survey, Hypothesis, Dimensions, Sources, and Importance of Hypothesis.
<b>CO4:</b>	knowledge about Sampling, Merits and demerits of Sampling Method, Essential concepts of sampling and Characteristics of good and Representative sampling.
<b>CO5:</b>	knowledge about Sources of Data Collection, Techniques of Data Collection, Tabulation.

### **Course –VI: Social Policy and Planning**

After successful completion of the Course in Social Policy and Planning, the student would have:

<b>CO1:</b>	knowledge of Social Policy – Meaning, Scope and Concept, Need, Component and Process of Social Policy, Basic Elements of Social Policy.
<b>CO2:</b>	knowledge of about Approaches of Planning, Concept of Developed and Developing countries, Planning for various Economic Systems.
<b>CO3:</b>	learnt about Indian Planning Process, Planning Commission & Five-Year Plans, Panchayati Raj.
<b>CO4:</b>	knowledge of Voluntary Sector in India, Social Administration, Social Administration at Central Level, State level and local level.
<b>CO5:</b>	knowledge of Plans and Programmes of Health, Education, Women and Child.

### **Course –VII: Social Problems**

After successful completion of the Course in Social Problems, the student would have:

<b>CO1:</b>	learnt about Social Problems, Social Problems in India: Poverty, Illiteracy, Unemployment, Malnutrition, Problem of ST & SC, Other Backward Communities, Destitute, Aged, Widows, Orphans.
<b>CO2:</b>	knowledge of the Problem of Child Labour, Street children, School dropouts, Drug abuse, Problem of Small, Marginal Farmers and landless agricultural Labourers, Problem of Juvenile Delinquent, Immoral Trafficking among Women and Young girls. Prostitution and Commercial Exploitation of women.
<b>CO3:</b>	learnt about Social Issues and the Environment, Water Conservation, Rainwater Harvesting, Watershed, Management.
<b>CO4:</b>	knowledge of Air Pollution, Water Pollution, and Soil Pollution, Marine Pollution, Noise Pollution, Thermal Pollution, Nuclear Hazards: Causes, Effects and Control measures.
<b>CO5:</b>	knowledge of Resettlement and Rehabilitation of People: Its problems and Concerns, Disaster Management: Floods, Earthquakes, Cyclones, and Landslides.

### **Course –VIII: Therapeutic Process and Counselling**

After successful completion of the Course in Therapeutic Process and Counselling, the student would have:

<b>CO1:</b>	knowledge of Perception, Learning, Memory, Emotion, and Motivation.
<b>CO2:</b>	knowledge of Personality, its Definition, Types, Structure and Factors influencing Personality Development, Psycho-Sexual Development, Psycho-Social Development.
<b>CO3:</b>	Learnt about Defence Mechanisms, Counselling, Types of Counselling – Development, Preventive, Facilitative, Crises, Techniques of Counselling.
<b>CO4:</b>	Knowledge of Intelligence, its Definition, Structure and Measurement. Mental Retardation: Definition, Types, Causes, Problems.
<b>CO5:</b>	learnt about Abnormal Psychology: Concept of Normal and Abnormal Behaviour, Etiological factors of Mental Illness, Types of Mental Disorders and Classification.

### Course –IX: Social Work Personal: Training and Development

After successful completion of the Course in Social Work Personal: Training and Development, the student would have:

<b>CO1:</b>	learnt about Community, Community Analyses: Structure and Functions, Community Organization, Community Organization as a method, Community Development & Its Scope
<b>CO2:</b>	knowledge of Strategies & Model of Community Work, Role of Community Worker as Guide, Enabler, Therapist, Researcher, Analyst, Project leader, Organizer & Activist in different setting (Health, Education, Correctional, Rural, Urban) and its limitations, Recording and current trend in Community Work.
<b>CO3:</b>	learnt about Social Action: Concept, Purpose & Techniques, Social Action Community Organization, Social Welfare Administrations: Meaning, Definition and Principles.
<b>CO4:</b>	knowledge of Programme Management, Project Formulation, Evaluation & Documentation, Relation: Meaning, Importance, Tools of Publicity.
<b>CO5:</b>	knowledge of Annual Plan, Annual Report, Press release, Case Story, Donation appeal, Adult Learning: Principles, Tools of Adult learning.

### Course –X: Social Work Research

After successful completion of the Course in Social Work Research, the student would have:

<b>CO1:</b>	Know about Interdisciplinary Approach to Research-Meaning, Definition, Characteristics, Process, Problems, Merits and Demerits. Need and Importance in Social Work..
<b>CO2:</b>	know about Research Design: Meaning, Definitions and Characteristics, Design of Social Research: Descriptive, Diagnostic, Exploratory and Experimental, steps and Subject Matter of Research Design.
<b>CO3:</b>	learnt about Case Study Method: Meaning, definition and Characteristics, Types, Assumption, Procedure, Tools & Techniques, Importance and limitations. Content Analysis: Definition, Characteristics, Steps, Utility and limitation.
<b>CO4:</b>	learnt about Diagrammatic Presentation of Data, Measures of Central Tendency: Mean, Median, and Mode. Importance of Statistics in Social Research and Social Work Research.
<b>CO5:</b>	learnt about Testing of Hypothesis, Report writing- Objective, Characteristics, Content, Problems and Suggestions

### Course –XI: Issues of Development

After successful completion of the Course in Issues of Development, the student would have:

<b>CO1:</b>	learnt about Development: Meaning, Concept and Approaches, Related terms: Growth, Progress, Change and Transformation, Agencies of Development.
<b>CO2:</b>	knowledge of Human Development: Concept and HDI Report, Methodology and Indices (HDI, HPI, GDI, GEN, GEM) Status of Human Development in India.
<b>CO3:</b>	learnt about Social Development: Concept and Approaches. Sustainable Development, Indicators of social development, Status of Health and Education in India.

<b>CO4:</b>	learnt about Economic Development: Concept, Approaches and Measurements, Political Development: Concept, Approaches and Measurements, People's Participation in Development.
<b>CO5:</b>	knowledge of Social Issue and Development, Role of five-year plan in Indian social and economic, Development, Socio - cultural Repercussion of Globalization. Social Implications of Info-tech Revolution.

### **Course –XII: Organisational Management**

After successful completion of the Course in Organisational Management, the student would have:

<b>CO1:</b>	knowledge of Organisation, its Meaning, Definition and Forms, Organisation as a structure and Process, Designing of Organisation structure, Organizational Behaviour.
<b>CO2:</b>	know about Organisation under, Company Act, Co-operative Society Act, Indian Trust Act, Indian Trade Union Act. Society Registration Act.
<b>CO3:</b>	learnt about Social Responsibility of Organisation, Organisation climate, Authority and Responsibility, Delegation of Authority, Communication.
<b>CO4:</b>	knowledge of Planning, Objectives and Forecasting, Decision making, Policies and strategies, Leadership, Motivation.
<b>CO5:</b>	knowledge of Management an Introduction, Nature of Management, Function of Management, Social Responsibility of Management.

### **Course –XIII: Guidance and Counselling**

After successful completion of the Course in Guidance and Counselling, the student would have:

<b>CO1:</b>	learnt about Guidance: Concept, Nature, Functions, Principles and Scope, Guidance for Personal Adjustment, Guidance for Vocation.
<b>CO2:</b>	knowledge of about Guidance in Community setting, Techniques of Guidance, Problems of Guidance, Relationship and Difference between Guidance and Counselling.
<b>CO3:</b>	learnt about Information Generation: Need and Procedure, Cumulative Records, Psychological Tests: Aptitude and Attitude, Interest and Values.
<b>CO4:</b>	knowledge of Counselling: Nature, Scope, Goals and Objectives, Functions and Process, Approaches to Counselling.
<b>CO5:</b>	knowledge of Counsellor – Personal Qualities and Profession Skills, Evaluation of Counselling, Counselling in Indian Context and Problems of Counselling.

### **Course -XIV(A): Human Resource Management**

After successful completion of the Course in Human Resource Management, the student would have:

<b>CO1:</b>	knowledge of Human Resource Management, Meaning, Importance and Functions of HRM, Role of HR Manager, Characteristics and Qualities of HR Manager.
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<b>CO2:</b>	knowledge of Human Resource Planning, Meaning, Importance and Factors affecting Human Resource, Planning, Human Resource Planning Process, Human Resource Planning at different levels.
<b>CO3:</b>	learnt about Human Problems at Workplace, Stress- Nature, Type, Individual and organizational, consequences of stress, Absenteeism-types, causes, consequences of absenteeism, Gender discrimination and sexual Harassment at the workplace.
<b>CO4:</b>	knowledge of Management of Behavioural Problems, Counselling techniques to handle-job stress, dual career and Family adjustment problems, absenteeism, Interpersonal relationship problem at the workplace and the home affecting work performance.
<b>CO5:</b>	knowledge about Comparative HRD experiences, HRD Overview in Government and Public Systems, HRD for Health and Family Welfare, HRD in Service Industry.

#### **Course -XIV(B): Rural and Tribal Community**

After successful completion of the Course in Rural and Tribal Community, the student would have:

<b>CO1:</b>	learnt about Concept of Community: Community as a Social system, types & characteristics of Community, Rural, Urban, Tribal, Rural-Urban Continuum, Structure of Community: Family, Kinship, Caste Class, Religion.
<b>CO2:</b>	knowledge of Rural Power Structure and Concept of Rural Leaderships, Rural Migration, Rural Local Administration, 73rd Amendment under Panchayati Raj.
<b>CO3:</b>	learnt about Tribal and Scheduled tribe, Distribution of Tribes in India: Geographical, Linguistic and Economic, Tribal Social Organisation, Tribal of Madhya Pradesh.
<b>CO4:</b>	knowledge of Tribal Problems, Rural Social Problems, Community Development Programmes in India, Various Programmes related to rural health, Tribal Development in India Policies and Programmes, Barriers to Social Development in Rural and tribal Society.
<b>CO5:</b>	knowledge of about Peoples Participation in Community Development, Assessment of Problem of Community, Project Planning and Evaluation, Importance of Communication in Community.

#### **Course –XV: Basics of Communication Skills**

After successful completion of the Course in Basics of Communication Skills, the student would have:

<b>CO1:</b>	knowledge of Communication: Definition, Nature and Process, Elements of Communication and Feedback, Principles of Effective Communication.
<b>CO2:</b>	knowledge of about Dimension and Directions of Communication, Means of Communication, Verbal Communication, SWOT Analysis.
<b>CO3:</b>	learnt about Non-Verbal Communication, Body Language, Paralanguage, Sign Language, Visual and Audio Communication, Barriers in Communication.
<b>CO4:</b>	knowledge of Written Formal Communication: Concept and types, Advantages, Disadvantages, Important and Need, Essentials of Effective letter writing.
<b>CO5:</b>	know about Modern Forms of Communication, Fax, E-mail and Video Conferencing.

### **Course -XVI: Basics of Computer Application**

After successful completion of the Course in Basics of Computer Application, the student would have:

<b>CO1:</b>	learnt about Introduction to Computer, Types of Computers, Hardware, Storage device, Software and their types, Causes and Utility of Computer in Social Science.
<b>CO2:</b>	know about Operating System: DOS, Windows, Meaning of Operating System, Dos Commands, Internal DOS Commands and External Dos Commands, Components of Windows, Basic Tasks of Window.
<b>CO3:</b>	learnt about Internet and E-mail, Internet: History of internet, Essential Components of internet, Uses of internet, Internet service provider, E-mail- Uses and Advantages of e-mail.
<b>CO4:</b>	knowledge of Microsoft office I: Word, Excel, Introduction to MS word, editing a Document, Previewing, Documents, Printing Documents, Creating Worksheets in Excel, Entering Data in Excel, Managing Worksheet.
<b>CO5:</b>	knowledge of about Microsoft office II: Power Point, Utility of Power point, Customising Power Point, Preparing Slide Practical.

### **Course –XVII (A): Labour Welfare Legislation**

After successful completion of the Course in Labour Welfare Legislation, the student would have:

<b>CO1:</b>	knowledge of labour legislation, Philosophy of Labour Laws, Labour Laws, Industrial Relations and Human Resource, Labour Laws: Concept, Origin, Objectives and Classification, Indian Constitution and Labour Legislations, Labour Policy, Emerging Issues and Future Trends.
<b>CO2:</b>	knowledge of Laws on Working Conditions, The Factories Act, 1948, Contract Labour (Prohibition and Regulation Act, 1986), Child Labour (Prohibition and Regulation Act, 1986)
<b>CO3:</b>	learnt about Industrial Relations laws, Trade Union Act, 1926, Industrial Disputes Act, 1947, Industrial Employment (Standing Orders) Act, 1946.
<b>CO4:</b>	knowledge of Wages and labour laws, Minimum wages Act, 1948, Payment of Wages Act, 1936, Payment of Bonus Act, 1965, Equal Remuneration Act, 1976.
<b>CO5:</b>	knowledge of Laws for Labour welfare and Social Security, Social Security Legislation: An Overview, The Workmen's Compensation Act, 1923, The Employees' State Insurance Act, 1948, The Maternity Benefit Act, 1961, The Payment of Gratuity Act, 1972.

### **Course -XVII(B): Urban Community Development**

After successful completion of the Course in Urban Community Development, the student would have:

<b>CO1:</b>	learnt about Urban Community: Concept and Characteristic, Types of cities, Origin and Development of Cities. Hurdles in development of modern cities of India.
<b>CO2:</b>	knowledge of Urbanization, Modernization, Westernization, Industrialization and Growth of Slums, Urban Problems in India.
<b>CO3:</b>	learnt about Community Disorganization, Family Disorganization, Urban migration and types, Issues related to urban development – concept of Town planning, Urban Settlement, obstacles in planned settlement.

<b>CO4:</b>	knowledge of Philosophy and Principle of Cooperative Movement, Historical development of Cooperative movement, Role of Cooperative movement as a strategy with Urban and rural poor. Problems of Cooperative movement in India.
<b>CO5:</b>	knowledge of Local governance, main functions of local governance, local governance of cities. Main provisions of 74th constitution amendment Act 1993, Urban Local self-governance in Madhya Pradesh. Problems of Urban local governance, Finances and Problems of Municipal Administration.

## PROGRAMME SPECIFIC OUTCOMES (PSO) For M.A. ENGLISH LITERATURE

After completing the Two Year (4 Semesters) M.A. English Literature Programme a student would have:

<b>PSO1:</b>	acquainted himself/herself with the various writers of English literature across different ages and countries, their philosophies, workings, biographical details, and their thoughts in relation to the socio-political atmosphere of the age in which they lived.
<b>PSO2:</b>	developed an ability to demonstrate competence in critically analyzing and appreciating scholarly works in the areas of English Language, English Literature, and translations.
<b>PSO3:</b>	enhanced his/her horizon of literary knowledge and understanding.
<b>PSO4:</b>	developed an understanding of the impact of literature in the minds of readers and in society at large and the psychological aspects of both creation and enjoyment of literature.
<b>PSO5:</b>	developed an ability to apply various theories in the field of literary research and to develop the technical skills and ethical decisions appropriate for the holistic professional development in the field.
<b>PSO6:</b>	acquired mastery in English language skills and an ability to use it in meaningful texts and contexts in the areas of both creative literature and criticism.
<b>PSO7:</b>	acquired proficiency in language, literature, and criticism so-as-to be interested in going for enhancing his/her knowledge by taking up academic research in specific fields.
<b>PSO8:</b>	acquired proficiency in linguistics and phonetics and their use in literary interpretation and appreciation.

## COURSE OUTCOMES (COS): M.A. ENGLISH LITERATURE

### Course I: Poetry

On successful completion of the Course a student would have:

CO1	acquainted with the history of poetry of various regions, different kinds of poems, and stanza forms, figures of speech and various aspects of prosody.
CO2	gained ability to appreciate and interpret various kinds of poetry from classical epics to modern free verse with objectivity.
CO3	acquainted with the poets belonging to different ages and their poetry, their styles and thematic concerns.
CO4	learnt to relate the emotional as well as the stylistic aspects of poetry.
CO5	created a self-interest in further doing research in a particular aspect, age or author in the field of poetry.

## Course II: Drama

On successful completion of the Course a student would have:

CO1	acquainted with various aspects of the Dramatic art viz., stagecraft, dialogues, characters, plot.
CO2	learnt about different stages of drama, and its various devices.
CO3	learnt about different kinds of drama like Tragedy, Comedy, Tragicomedy, Melodrama, Farce, Masque etc.
CO4	come across the history of European drama in general and British drama in particular from early times to the modern theatre.
CO5	acquired the ability to appreciate and interpret dramatic presentations, their impact on the audience and their relation to society at large.
CO6	ability to comprehend as to how various counters of human life and its values are transacted by the dramatist through the stage and relate them to human life at large.
CO7	developed an interest in furthering the knowledge in the field of drama by taking up research study in a particular area, age, or author.

## Course III: Fiction

On successful completion of the Course a student would have:

C01	the background of the history of development of fiction in England and other parts of the world.
CO2	understood the various kinds of fiction and its different aspects.
CO3	the ability to analyze and interpret the various themes underlying the narrative.
CO4	comprehended the narrative techniques and the art of characterization of various novelists in different Ages and Countries.
CO5	Developed interest in taking further indepth studies and do research in a particular aspect, author or age in the field of fiction.
CO6	the ability to understand human values and other emotional and social issues and relate them to real life situations.

## Course IV: Prose

On successful completion of the Course a student would have:

CO1	acquired the knowledge of the development of English literary prose through various writers through different ages.
CO2	developed an interest in exploring the styles and techniques of prose-writing adopted by different authors of literary essays.
CO3	acquired the ability to analyze and interpret different themes dealt with in the prose-writing of different authors.
CO4	gained the knowledge of the development of the language of prose and as to how it has emerged to be in its current form.

CO5	gained knowledge about human values, ethics and other various kinds of social life through the themes dealt with by the authors and relate them to the current ways of living.
C06	developed an interest in further exploring the field of prose- writing by doing indepth research in this sphere.

### **Course V: Critical Theory**

On successful completion of the Course a student would have:

CO1	acquired the knowledge of what is Literary Criticism and what are its uses as well as the various types of criticism.
C02	acquired the knowledge of the history and development of European Literary Criticism right from Aristotle to the present times through the writings of various authors of different ages.
CO3	comprehended various theories of critiquing and the ways and means of practically and objectively analyzing the merits and demerits of literary works.
C04	have acquainted himself/herself with major authors in the field of criticism and their works.
C05	developed an interest in taking up further research in the field of criticism through indepth studies of any author, or of age.

### **Course VI: English Language**

On successful completion of the Course a student would have:

CO1	acquainted himself/herself with the development and variety of English language over a period of time.
CO2	become aware of the regarding social and geographical variants of English as a global language.
C03	become proficient in Received Pronunciation (RP) of English, especially in identifying phonetic alphabets, syllables and accents.
C04	become aware of advanced theories of grammar such as T.G. Model, along with advanced areas of Syntax such as Phrase Structure Grammar (PS Grammar), IC analysis, clause analysis etc.
C05	become aware of morphology an morphonemic rules of English

### **Course VII: Indian Writing in English**

On successful completion of the Course a student would have:

C01	Acquired a first-hand knowledge of Indian Writings in English and translations along with its history and its struggle to carve a niche in the field of English.
C02	come across various writers of Indian origin writing in English and their major works and other biographical details and the periods in which they lived.
C03	become well aware of various genres of literature produced in this branch of English literature both in the pre- independence and post-independence period.

C04	become aware of Indian Diaspora and the literatures produced by these writers.
C05	acquired the ability to compare Indian Writing in English with other branches of English literature and appreciate it to be a well-recognized branch of literature.
C06	acquainted himself/herself with the Indian thought and philosophies and cultures mirrored in the English literature produced by Indians.
C07	developed an interest in further exploring the field of Indian Writing in English and doing research in selected genres, authors or ages.

### **Course VIII: Linguistics & Stylistics**

After successful completion of the Course, a student should be able to:

C01	understand the definitions, characteristics and varieties of human languages in general and English language in particular.
C02	understand different varieties of English Language as register, style, dialect etc.
C03	understand phonetics, phonology and various theories as phoneme theory and syllable theory etc.
C04	practise of phonetic transcription both according to GIE and RP along with accent and intonation.
C05	understand proficient in the modern concepts of grammar as structural grammar, T. G. Grammar, IC analysis etc.
C06	take up analysis of poetry using modern theories of Linguistic Stylistics.

### **Course IX: American Literature**

On successful completion of the Course a student would have:

CO1	a first-hand knowledge about the history and tradition of American literature.
CO2	acquired the knowledge about the various writers in American literature.
CO3	become well versed in the genres of poetry, drama, novels, and prose-writing.
CO4	become aware of the thoughts and philosophies of American people and their way of life, their culture and their emotional workings.
CO5	developed an interest in further taking up research studies in particular area, author, or age in American literature.

### PROGRAMME SPECIFIC OUTCOMES (PSO) For M.A. HINDI LITERATURE

After completing the Two Year (4 Semesters) M.A. Hindi Literature Programme a student would have:

<b>PSO1:</b>	ज्ञान के क्षेत्र में योगदान करने की योग्यता।
<b>PSO2:</b>	मानविकी के विभिन्न क्षेत्रों में जाने की दृष्टि से सहयोगी।

### COURSE OUTCOMES (COS): M.A. HINDI LITERATURE

<b>स्नातकोत्तर: प्रथमसेमेस्टर:</b>	
CO1	मध्यकालीनबोध, संस्कृति और विचार के महत्त्व को समझने की दृष्टि से उपयोगी।
CO2	रंगकर्म के ज्ञान में विशेष सहायक, उपन्यास जैसी विधा के अध्ययन से आधुनिक युग की समझ विकसित करने की दृष्टि से महत्त्वपूर्ण।
CO3	भारतीय साहित्य सिद्धांत के गंभीर ज्ञान में सहयोगी।
CO4	रोजगार की दृष्टि से भाषा ज्ञान प्राप्त करने में सहयोगी।

<b>स्नातकोत्तर: द्वितीय सेमेस्टर:</b>	
CO1	मध्यकाल के साहित्यिक सांस्कृतिक उत्कर्ष को समझने की दृष्टि से महत्त्वपूर्ण।
CO2	गद्य-ज्ञान की दृष्टि से उपयोगी।
CO3	कहानी और निबन्धों के अध्ययन के द्वारा आधुनिक युग की समझ के विकास में उपयोगी।
CO4	पाश्चात्य सैद्धान्तिकी की समझ में सहयोगी।
CO5	जनसंचार माध्यमों की अध्ययन और अनुवाद सम्बन्धी ज्ञान के द्वारा छात्रों को रोजगारोन्मुखी बनाने की दृष्टि से उपयोगी।

<b>स्नातकोत्तर: तृतीय सेमेस्टर:</b>	
CO1	आधुनिक काव्य के विस्तृत ज्ञान की दृष्टि से महत्त्वपूर्ण।
CO2	भाषा वैज्ञानिक अध्ययन के द्वारा भाषा की सूक्ष्मता का अध्ययन।
CO3	साहित्य के इतिहास के ज्ञान की दृष्टि से उपयोगी।
CO4	उपन्यासों के अध्ययन के द्वारा आधुनिक भारतीय यथार्थ की समझ में सहायक।



स्नातकोत्तर: चतुर्थ सेमेस्टर:	
CO1	आधुनिक काव्य-विवेक के विकास में उपयोगी।
CO2	हिन्दी भाषा की गहन समझ की दृष्टि से महत्त्वपूर्ण।
CO3	आधुनिक साहित्य के इतिहास के अध्ययन की दृष्टि से उपयुक्त।
CO4	प्रेमचन्द-साहित्य के अध्ययन के द्वारा भारतीय ग्रामीण समाज की समझ के विकास में उपयोगी।

# **MASTER OF COMMERCE (MCOM)**

## **PROGRAMME OUTCOMES**

A postgraduate student in Commerce after completion of the programme should be able to-

<b>PO:1</b>	Communication Skills: Ability to express thoughts and ideas effectively in writing and orally; Communicate with others using appropriate media; confidently share one's views and express herself/himself; demonstrate the ability to listen carefully, read and write analytically, and present complex information in a clear and concise manner to different groups.
<b>PO:2</b>	Critical thinking: Capability to apply analytic thought to a body of knowledge; analyse and evaluate evidence, arguments, claims, beliefs on the basis of empirical evidence; identify relevant assumptions or implications; formulate coherent arguments; critically evaluate practices, policies and theories by following scientific approach to knowledge development.
<b>PO:3</b>	Problem solving: Capacity to extrapolate from what one has learned and apply their competencies to solve different kinds of non-familiar problems, rather than replicate curriculum content knowledge; and apply one's learning to real life situations.
<b>PO:4</b>	Analytical reasoning: Ability to evaluate the reliability and relevance of evidence; identify logical flaws and holes in the arguments of others; analyse and synthesize data from a variety of sources; draw valid conclusions and support them with evidence and examples and addressing opposing viewpoints.
<b>PO:5</b>	Research-related skills: A sense of inquiry and capability for asking relevant/appropriate questions, problematizing, synthesizing, and articulating; Ability to recognize cause-and-effect relationships, define problems, formulate hypotheses, test hypotheses, analyze, interpret and draw conclusions from data, establish hypotheses, predict cause-and-effect relationships; ability to plan, execute and report the results of an experiment or investigation.
<b>PO:6</b>	Cooperation/Teamwork: Ability to work effectively and respectfully with diverse teams; facilitate cooperative or coordinated effort on the part of a group, and act together as a group or a team in the interests of a common cause and work efficiently as a member of a team.
<b>PO:7</b>	Scientific reasoning: Ability to analyze, interpret and draw conclusions from quantitative/qualitative data; and critically evaluate ideas, evidence, and experiences from an open-minded and reasoned perspective.
<b>PO:8</b>	Reflective thinking: Critical sensibility to lived experiences, with self-awareness and reflexivity of both self and society.
<b>PO:9</b>	Information/digital literacy: Capability to use ICT in a variety of learning situations, demonstrate ability to access, evaluate, and use a variety of relevant information sources; and use appropriate software for analysis of data.
<b>PO:10</b>	Self-directed learning: Ability to work independently, identify appropriate resources required for a project, and manage a project through to completion. Multicultural competence: Possess knowledge of the values and beliefs of multiple cultures and a global perspective; and capability to effectively engage in a multicultural society and interact

	respectfully with diverse groups.
<b>PO:11</b>	Moral and ethical awareness/reasoning: Ability to embrace moral/ethical values in conducting one's life, formulate a position/argument about an ethical issue from multiple perspectives, and use ethical practices in all work. Capable of demonstrating the ability to identify ethical issues related to one's work avoid unethical behaviour such as fabrication, falsification or misrepresentation of data or committing plagiarism, not adhering to intellectual property rights; appreciating environmental and sustainability issues; and adopting objective, unbiased and truthful actions in all aspects of work.
<b>PO:12</b>	Leadership readiness/qualities: Capability for mapping out the tasks of a team or an organization, and setting direction, formulating an inspiring vision, building a team who can help achieve the vision, motivating and inspiring team members to engage with that vision, and using management skills to guide people to the right destination, in a smooth and efficient way.
<b>PO:13</b>	Lifelong learning: Ability to acquire knowledge and skills, including, learning how to learn", that are necessary for participating in learning activities throughout life, through self-paced and self-directed learning aimed at personal development, meeting economic, social, and cultural objectives, and adapting to changing trades and demands of workplace through knowledge/skill development/reskilling.
<b>PO:14</b>	develop an ability to apply knowledge gained in problem solving
<b>PO:15</b>	work in teams with enhanced communication and inter-personal skills.
<b>PO:16</b>	seek employment in functional areas like Accounting, Taxation, Banking, Insurance and Corporate Law.
<b>PO:17</b>	start entrepreneurial activities.
<b>PO:18</b>	understand the nature of Business Environment.
<b>PO:19</b>	analyses the changing dimensions of business environment.
<b>PO:20</b>	analyses the recent Economic and Tax reforms in India
<b>PO:21</b>	explain the accountability of companies towards its stakeholders and society and create an integrated value framework for sustainable development of corporations
<b>PO:22</b>	inculcate ethical values, teamwork, leadership, and managerial skills

## PROGRAMME SPECIFIC OUTCOMES (PSO) For M.Com.

Students graduating with the M.Com. degree should be able:

<b>PSO1:</b>	to provide a systematic and rigorous learning and exposure to Banking and Finance related disciplines.
<b>PSO2:</b>	to train the student to develop conceptual, applied and research skills as well as competencies required for effective problem solving and right decision making in routine and special activities relevant to financial management and Banking Transactions of a business.
<b>PSO3:</b>	to acquaint a student with conventional as well as contemporary areas in the discipline of Commerce.
<b>PSO4:</b>	to enable a student well versed in national as well as international trends.
<b>PSO5:</b>	to facilitate the students for conducting business, accounting and auditing practices, role of regulatory bodies in corporate and financial sectors nature of various financial instruments.
<b>PSO6:</b>	to provide in-depth understanding of all core areas specifically Advanced Accounting, International Accounting, Management, Security Market Operations and Business Environment, Research Methodology and Tax planning.

## COURSE OUTCOMES (COS): M.Com.

### Course 1 : Advanced Accounting

Upon successful completion of this course, the student will be able to:

CO1	acquire conceptual knowledge of basics of accounting
CO2	identify events that need to be recorded in the accounting records
CO3	develop the skill of recording financial transactions and preparation of reports in accordance with GAAP
CO4	describe the role of accounting information and its limitations
CO5	equip with the knowledge of accounting process and preparation of final accounts of sole trader
CO6	identify and analyze the reasons for the difference between cash book and passbook balances

### Course 2 : Cost Analysis And Control

Upon successful completion of this course, the student will be able to:

CO1	explains cost accounting systems.
CO2	explains the purposes of cost accounting.
CO3	defines the concepts of cost, expense, loss and revenue.
CO4	explains the relationships between cost and financial accounting.
CO5	prepare production cost statement and cost of goods sold statement.
CO6	explains main manufacturing cost elements.

### Course 3 : Business Environment

Upon successful completion of this course, the student will be able to:

CO1	examine how different factors and trends in the external environment are likely to impact upon a proposed business venture.
CO2	conduct a business analysis of the local and national environment.
CO3	employ business models and tools to evaluate changes in an organization's business environment.
CO4	present a business environmental analysis and recommendations to reduce the risk of the identified issues.
CO5	describe what business operations encompass.
CO6	explain the structure, process and function of business management.
CO7	explore the role of marketing in business.

#### **Course 4 : Management Concepts**

On completion of this course, the students will be able to:

CO1	understand the concepts related to Business.
CO2	demonstrate the roles, skills and functions of management.
CO3	analyze effective application of PPM knowledge to diagnose and solve organizational problems and develop optimal managerial decisions.
CO4	understand the complexities associated with management of human resources in the organizations and integrate the learning in handling these complexities

#### **Course 5 : Corporate Legal Framework**

After completing this course the students would be:

CO1	able to appreciate the importance of law and legal institutions in corporate world
CO2	able to have a basic understanding of the laws relating to contract, consumer protection, competition, companies and dispute resolution Course Contents

#### **Course 6 : Functional Management**

On completion of this course, the students will be able to :

CO1	understand the concepts related to Business.
CO2	demonstrate the roles, skills and functions of management.
CO3	analyze effective application of PPM knowledge to diagnose and solve organizational problems and develop optimal managerial decisions.
CO4	understand the complexities associated with management of human resources in the organizations and integrate the learning in handling these complexities

### **Course 7 : Organizational Behaviour**

After completion of the course, learners will be able to:

CO1	differentiate between various types of personality using standard tools;
CO2	appreciate the applicability of decision making process in real life situations and use Transactional Analysis and Johari Window;
CO3	understand the level of motivation in employees;
CO4	describe characteristics of a leader;

### **Course 8: Advanced Statistical Analysis**

After completion of the course ,learners will be able to:

CO1	apply a basic knowledge of statistics to business disciplines;
CO2	develop the ability to analyze and interpret data to provide meaningful information to assist in management decision making activities;
CO3	apply appropriate graphical and numerical descriptive statistics for different types of data;
CO4	apply probability rules and concepts relating to discrete and continuous random variables to answer questions within a business context;
CO5	explain and interpret a variety of hypo thesis tests to aid decision making in a business context;
CO6	use simple/multiple regression models to analyze the underlying relationships between the variables

### **Course 9: Managerial Economics**

After completion of the course, learners will be able to:

CO1	develop an understanding of the applications of managerial economics.
CO2:	Interpret regression analysis and discuss why it's employed in decision-making.
CO2	discuss optimization and utility including consumer behaviour. CO4: Assess the relationships between short-run and long-run costs.
CO3	analyze perfectly competitive markets including substitution.
CO4	explain uniform pricing and how it relates to price discrimination and total revenue.
CO5	students will study fundamental concepts of Economics, including supply and demand as well as methods of measuring economic performance, such as GDP, inflation, and unemployment.
CO6	Other topics include the profit, causes of instability in the economy and potential corrective measures.

### **Course 10: Accounting for Managerial Decisions**

After completing the course learners will be able to:

CO1	describe the concept of management accounting.
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CO2	prepare various budget sand to measure the performance of the business firm applying budgetary control measures;
CO3	compute standard cost sand
CO4	analyze production cost
CO5	preparing variance report and analyze cost, volume and profit and to solve short run decision making problems applying marginal costing and Break-Even technique.

### **Course 11: Tax Planning And Management**

After completing the course learners will be able to:

CO1.	expose the students to the latest provisions of Income Tax Act.
CO2.	identify the Tax Planning and management, Assessment Procedures for Individuals, Firms and Companies.
CO3	get working knowledge regarding legitimate way of tax planning under different financial/ managerial decisions after taking into consideration the impact of Direct Tax Laws.

### **Course 12: Entrepreneurship Development**

Upon the Completion of the course , the student will be able to :

CO1	understand the concept of entrepreneurship in the context of Indian economic scenario.
CO2	link the individual's capability and strength as a guiding factor towards entrepreneurial orientation.
CO3	understand social support system for gaining strength towards entrepreneurial preferences.
CO4	understand entrepreneurial process for initiating new venture creation.
CO5	understand various dimensions of managing a business enterprise once it is formed.

### **Course 13: Business Taxation**

Upon the Completion of the course , the student will be able to :

CO1	understand the Basic concepts of Residential status and tax incidence , Exempted Income and Deemed Income
CO2	compute Tax Liabilities of Individual and Taxation on Agriculture Income
CO3	demonstrate Assessment of Tax and Return of Income Tax. Types of Assessment.
CO4	compute Advance payment of tax
CO5	understand procedure of Appeal and Revisions and Settlement of cases.

### **Course 14: Direct Tax In India**

Upon the Completion of the course , the student will be able to :

CO1	compute Income from Business and Profession
CO2	assess firm and Association of Person and compute of Tax Liabilities.
CO3	demonstrate Assessment of Companies, including tax computation
CO4	demonstrate Assessment of Co-operative society. Charitable and other Trust including tax calculation
CO5	explain Assessment of Non-Residents

**Course 15: Sales And Service Tax**

Upon the Completion of the course , the student will be able to :

CO1	understand the concept of Central Sales Tax
CO2	compute Taxable Turnover
CO3	understand the concept of Wealth Tax
CO4	compute Net wealth and wealth tax
CO5	understand the concept of Service Tax

**Course 16: Indirect Tax**

Upon the Completion of the course, the student will be able to :

CO1	understand the Concepts of Indirect Taxes and Basic conditions of Excise liability
CO2	explain Inclusion and exclusion from Assessable Value
CO3	explain Assessment Procedure,
CO4	explain Nature of customs duty
CO5	get complete knowledge about Export incentives



## **MASTER OF SCIENCE (M.Sc.)**

### **PROGRAMME OUTCOMES**

<b>Subjects</b>	<b>Outcomes</b>
<a href="#">Chemistry</a> <a href="#">Mathematics</a> <a href="#">Physics</a> <a href="#">Botany</a> <a href="#">Computer Science</a>	<p>After graduation a student will be able to</p> <p><b>PO:1</b> Communication Skills: Ability to express thoughts and ideas effectively in writing and orally; Communicate with others using appropriate media; confidently share one's views and express herself/himself; demonstrate the ability to listen carefully, read and write analytically, and present complex information in a clear and concise manner to different groups.</p> <p><b>PO:2</b> Critical thinking: Capability to apply analytic thought to a body of knowledge; analyse and evaluate evidence, arguments, claims, beliefs on the basis of empirical evidence; identify relevant assumptions or implications; formulate coherent arguments; critically evaluate practices, policies and theories by following scientific approach to knowledge development.</p> <p><b>PO:3</b> Problem solving: Capacity to extrapolate from what one has learned and apply their competencies to solve different kinds of non-familiar problems, rather than replicate curriculum content knowledge; and apply one's learning to real life situations.</p> <p><b>PO:4</b> Analytical reasoning: Ability to evaluate the reliability and relevance of evidence; identify logical flaws and holes in the arguments of others; analyse and synthesize data from a variety of sources; draw valid conclusions and support them with evidence and examples and addressing opposing viewpoints.</p> <p><b>PO:5</b> Research-related skills: A sense of inquiry and capability for asking relevant/appropriate questions, problematizing, synthesizing, and articulating; Ability to recognize cause-and-effect relationships, define problems, formulate hypotheses, test hypotheses, analyze, interpret and draw conclusions from data, establish hypotheses, predict cause-and-effect relationships; ability to plan, execute and report the results of an experiment or investigation.</p> <p><b>PO:6</b> Cooperation/Teamwork: Ability to work effectively and respectfully with diverse teams; facilitate cooperative or coordinated effort on the part of a group, and act together as a group or a team in the interests of a common cause and work efficiently as a member of a team.</p> <p><b>PO:7</b> Scientific reasoning: Ability to analyze, interpret and draw conclusions from quantitative/qualitative data; and critically evaluate ideas, evidence, and experiences from an open-minded and reasoned perspective.</p> <p><b>PO:8</b> Reflective thinking: Critical sensibility to lived experiences, with self-awareness and reflexivity of both self and society.</p> <p><b>PO:9</b> Information/digital literacy: Capability to use ICT in a variety of learning</p>

	<p>situations, demonstrate ability to access, evaluate, and use a variety of relevant information sources; and use appropriate software for analysis of data.</p> <p><b>PO:10</b> Self-directed learning: Ability to work independently, identify appropriate resources required for a project, and manage a project through to completion.</p> <p>Multicultural competence: Possess knowledge of the values and beliefs of multiple cultures and a global perspective; and capability to effectively engage in a multicultural society and interact respectfully with diverse groups.</p> <p><b>PO:11</b> Moral and ethical awareness/reasoning: Ability to embrace moral/ethical values in conducting one's life, formulate a position/argument about an ethical issue from multiple perspectives, and use ethical practices in all work. Capable of demonstrating the ability to identify ethical issues related to one's work avoid unethical behaviour such as fabrication, falsification or misrepresentation of data or committing plagiarism, not adhering to intellectual property rights; appreciating environmental and sustainability issues; and adopting objective, unbiased and truthful actions in all aspects of work.</p> <p><b>PO:12</b> Leadership readiness/qualities: Capability for mapping out the tasks of a team or an organization, and setting direction, formulating an inspiring vision, building a team who can help achieve the vision, motivating and inspiring team members to engage with that vision, and using management skills to guide people to the right destination, in a smooth and efficient way.</p> <p><b>PO:13</b> Lifelong learning: Ability to acquire knowledge and skills, including, learning how to learn", that are necessary for participating in learning activities throughout life, through self-paced and self-directed learning aimed at personal development, meeting economic, social and cultural objectives, and adapting to changing trades and demands of workplace through knowledge/skill development/reskilling.</p> <p><b>PO:14</b> The student should acquire deep knowledge about the core subjects.</p> <p><b>PO:15</b> Developing research knowledge and skill of data collection and enabling students in using sampling techniques</p> <p><b>PO:16</b> Develop problem solving skills, critical thinking and scientific temperament among students through various research projects, field study, case study etc.</p>
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## PROGRAMME SPECIFIC OUTCOMES (PSO) For M.Sc. CHEMISTRY

After completing the two-year (4 semester) M.Sc. Chemistry Programme a student would have:

<b>PSO1:</b>	in-depth and detailed functional knowledge of the fundamental theoretical and experimental methods of chemistry.
<b>PSO2:</b>	expertise of a well-defined area of research within chemistry.
<b>PSO3:</b>	specific skills in planning and conducting advanced chemical experiments and applying structural chemical techniques.
<b>PSO4:</b>	the ability to contribute to the generation of new scientific insights or to the innovation of new application of chemical research.
<b>PSO5:</b>	the awareness and sense of responsibilities towards environment and apply knowledge to solve the issues related to environmental pollution.
<b>PSO6:</b>	the ability to analyse data obtained from Sophisticated instruments (like UV-Vis, Fluorescence, FTIR, NMR, HPLC) for the structure determination and chemical analysis.
<b>PSO7:</b>	the ability to apply green chemistry approach towards planning and execution of research in frontier areas of chemical sciences.
<b>PSO8:</b>	in-depth knowledge of the topic which can develop the problem-solving skills using chemical principles.
<b>PSO9:</b>	analytical skills such as synthesizing, separating, characterizing chemical compounds and chemical reaction with help of sophisticated instruments
<b>PSO10:</b>	Developed research skills through dissertation/ project work in different fields of chemical such as organic, nano science, analytical, physical etc.

## COURSE OUTCOMES (COS): M.Sc. CHEMISTRY

### Course-I: Inorganic Chemistry

After Successful completion of the course a student would have

CO1	learnt about VSEPR theory, Walsh diagram, bent rule, energetics of hybridization and simple reaction of covalently bonded molecules
CO2	the knowledge about the stability of metal complexes with reference to the nature of metal ion and ligand, Chelate effect and its thermodynamic origin, determination of binary formation constants by potentiometry and spectrophotometry.
CO3	learnt about the inert and labile complexes, kinetic application of VB CF theories, outer and inner sphere type reaction.
CO4	learnt about limitations of crystal field theory, M.O theory in octahedral, tetrahedral and square planar complexes.
CO5	learnt about the classification and theoretical basis of HSAB concept, donor-acceptor no. and E -C equation.

**Course-II: Organic Chemistry****After Successful completion of the course a student would have**

CO1	learnt about the aromaticity in benzenoid and non-benzenoid compounds, PMO approach, catenanes and rotaxanes compounds.
CO2	the knowledge about the stereospecific and stereoselective synthesis, stereochemistry of the compounds containing N,S and P. Elements of symmetry and optical activity.
CO3	learnt to conformational analysis of cycloalkanes, decalines, Hammett equation and Taft equation.
CO4	the knowledge of the reaction mechanism, Hammond's postulates, potential energy diagrams and isotopes effects.
CO5	learn about the SN1 mechanism. Nucleophilic substitution at an allylic, aliphatic trigonal and a vinylic carbon. phase transfer catalysis and ultrasound, ambident nucleophile, regioselectivity.

**Course-III: Physical Chemistry****After Successful completion of the course a student would have**

CO1	learnt Schrodinger wave equation and solution of equation to some model
CO2	known types of approximation method and application of these approximation method. HMO theory of some conjugated bond and calculate charge density calculation
CO3	learnt various types of Angular momentum and eigen value and eigen function of angular momentum
CO4	learnt the basic concept of classical thermodynamics partial molar properties, their significance and determination ideal and non-ideal function, activity and activity coefficient and three component system
CO5	learnt statistical thermodynamics concept of distribution, partition function, calculate thermodynamic property in terms of partition function. Application of partition function, fermi Dirac and Bose Einstein statistics

**Course-IV: Group Theory and Spectroscopy****After Successful completion of the course a student would have**

CO1	learnt symmetry and group theory in chemistry
CO2	learnt Microwave/ rotational spectroscopy
CO3	learnt Infrared/ vibrational spectroscopy
CO4	learnt Raman Spectroscopy
CO5	learnt Electronic and Photoelectron spectroscopy

**Course-V: Mathematics for Chemist****After Successful completion of the course a student would have**

CO1	Learnt vectors and Matrix Algebra
CO2	Learnt Differential calculus

CO3	Learnt Integral calculus
CO4	Learnt elementary differential equation
CO5	Learnt permutation combination and probability

### **Course-VI: Biology for Chemist**

**After Successful completion of the course a student would have**

CO1	learnt the basics of cell structure and Function
CO2	learnt the basics of Carbohydrates.
CO3	learnt the biological function of lipid
CO4	learnt the basics of amino acid, Peptides and Protein
CO5	learnt the basics of Nucleic acid

### **Course-VII: Inorganic Chemistry**

**After Successful completion of the course a student would have**

CO1	Learnt about the selection rule for electronic spectroscopy, various types of electronic transitions and charge transfer spectra.
CO2	Learnt about theoretical contribution to magnetic moment and spin cross over.
CO3	Known about the structural elucidation and important reactions of metal carbonyls.
CO4	Learnt about the metallo-carboranes compounds with M-M multiple bonds.
CO5	Learnt about the ORD and CD for absolute configuration of complexes and isomerism in chelate rings.

### **Course-VIII: Organic Chemistry**

**After Successful completion of the course a student would have**

CO1	Learnt the arenium ion mechanism, ortho/ para ratio, ipso attack, diazonium coupling.
CO2	Learnt the free radical substitution mechanism, allylic halogenation and arylation of aromatic compounds
CO3	Learnt the addition reaction and stereochemical aspects.
CO4	Known about the addition to carbon- Hetero multiple bonds and elimination reactions.
CO5	Learnt the pericyclic reaction with reference to the M.O theory.

### **Course-IX: Physical Chemistry**

**After Successful completion of the course a student would have**

CO1	learnt the basic concept of nuclear magnetic resonance spectroscopy
CO2	learnt the basic of Nuclear Quadrupole Resonance Spectroscopy
CO3	learnt Electron Spin Resonance Spectroscopy
CO4	learnt X-ray Diffraction
CO5	learnt electron diffraction and neutron diffraction

**Course-X: Spectroscopy and diffraction pattern****After Successful completion of the course a student would have**

CO1	learnt the basic concept of nuclear magnetic resonance spectroscopy
CO2	learnt the basic of Nuclear Quadrupole Resonance Spectroscopy
CO3	learnt Electron Spin Resonance Spectroscopy
CO4	learnt X-ray Diffraction
CO5	learnt electron diffraction and neutron diffraction

**Course-XI: Computer for Chemist****After Successful completion of the course a student would have**

CO1	learnt Introduction to computers and Computing
CO2	learnt Computer Programming in FORTRAN/C/BASIC
CO3	learnt C+ C++ programming in chemistry
CO4	learnt use of Computer Programme
CO5	learnt the basics of use of internet in learning chemistry allied areas.

**Course-XII: Application of spectroscopy****After Successful completion of the course a student would have**

CO1	learnt Electronic spectroscopy, Electronic spectra of complexes
CO2	learnt Vibrational spectroscopy Symmetry and shapes of some molecules
CO3	learnt general of nuclear magnetic resonance spectroscopy of organic compound
CO4	learnt in detail nuclear magnetic resonance spectroscopy
CO5	learnt Mossbauer spectroscopy

**Course-XIII: Photochemistry****After Successful completion of the course a student would have**

CO1	learnt Basic of Photochemical reaction
CO2	learnt to determine the reaction mechanism of photochemical reaction
CO3	learnt photochemistry of Alkenes and Photochemistry of Aromatic compounds.
CO4	learnt photochemistry of Carbonyl compounds
CO5	learnt miscellaneous photochemical reactions

**Course-XIV: Environmental Chemistry****After Successful completion of the course a student would have**

CO1	learnt about Atmosphere, Atmospheric chemistry and tropospheric photochemistry
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CO2	learnt Basic of air pollution, Acid rain, Green house effect, Urban air pollution.
CO3	learnt Aquatic chemistry and Water Pollution
CO4	learnt environmental toxicology
CO5	learnt soil and environmental Disaster

### **Course-XV: Organotransition Metal Chemistry**

**After Successful completion of the course a student would have**

CO1	learnt Alkyls and Aryls of transition metals Compounds of Transition Metal-Carbon Multiple Bonds
CO2	learnt about Transition Metal $\pi$ -Complexes
CO3	known Transition metal compounds with bonds to hydrogen, boron, silicon
CO4	known about Homogeneous Catalysis
CO5	learnt Fluxional Organometallic Compounds

### **Course-XVI: Polymer Chemistry**

**After Successful completion of the course a student would have**

CO1	learnt Basic of Polymer Chemistry
CO2	learnt about polymer characterization.
CO3	learnt Analysis and testing of polymer
CO4	known the basics of inorganic Polymer
CO5	learnt Structure, Properties and application of polymers

### **Course-XVII: Application of Spectroscopy**

**After Successful completion of the course a student would have**

CO1	learnt the basics of Ultraviolet and Visible spectroscopy
CO2	learnt the basics of Infrared Spectroscopy, Optical Rotatory Dispersion (ORD) and Circular Dichromism (CD)
CO3	acquired the knowledge of Nuclear Magnetic Resonance of Paramagnetic Substances in Solution
CO4	learnt to carry out Carbon-13 NMR Spectroscopy
CO5	acquired the basics of Mass Spectroscopy

### **Course-XVIII: Solid State Chemistry**

**After Successful completion of the course a student would have**

CO1	learnt basic about solid state reaction
CO2	learnt crystal defect and non- Stoichiometry
CO3	learnt Electronic properties and band theory
CO4	learnt organic solids

CO5	learnt about liquid crystals
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### **Course-XIX: Biochemistry**

**After Successful completion of the course a student would have**

CO1	learnt metal ions in biological systems, Bio energetics and ATP Cycle
CO2	learnt Electron transfer in biology, Nitrogen fixation
CO3	learnt Enzymes and its mechanism, Kinds of reaction catalyzed by enzymes
CO4	learnt co-enzyme chemistry, biotechnological applications of enzymes
CO5	learnt biological cell and its constituent, bioenergetics, bio polymer interaction, cell membrane and transport of ions.

### **Course-XX: Analytical chemistry**

**After Successful completion of the course a student would have**

CO1	learnt the basics of analytical chemistry, errors and evaluation
CO2	learnt Food analysis
CO3	learnt Analysis of water Pollution.
CO4	learnt analysis of soil, fuel, body fluids and drugs
CO5	learnt clinical chemistry and drug analysis.

### **Course-XXI: Medicinal chemistry**

**After Successful completion of the course a student would have**

CO1	learnt Structure and activity
CO2	learnt pharmacodynamics
CO3	learnt antibiotics and antibacterial.
CO4	learnt antifungal and antimalarials
CO5	learnt non-steroidal anti-inflammatory drugs.



## PROGRAMME SPECIFIC OUTCOMES (PSO) For M.Sc. MATHEMATICS

After completing the two-year (4 semester) M.Sc. Mathematics Programme a student would have:

<b>PSO1:</b>	strong Foundation in Knowledge: Have strong foundation in core areas of Mathematics, and able to communicate Mathematics effectively.
<b>PSO 2:</b>	abstract Skills: Evaluate hypotheses, theories, methods, and evidence within their proper contexts
<b>PSO3:</b>	Skill in Problem Solving: Solve complex problems by critical understanding, analysis, and synthesis
<b>PSO4:</b>	proficiency in Interdisciplinary Skills: Select, interpret, and critically evaluate information from a range of sources that include books, scientific reports, journals, case studies and internet.
<b>PSO 5:</b>	skill in Application and Research Efficiency: Provide a systematic understanding of the concepts and theories of mathematics and their application in the real world- to an advanced level and enhance career prospects in a huge array of fields, viz. in industry, commerce, education, finance, and research.
<b>PSO 6:</b>	lifelong Practical Knowledge: Recognize the need to engage in lifelong learning through continuous education, and research leading to higher degrees like PhD, DSc etc.

## COURSE OUTCOMES (COS): M.Sc. MATHEMATICS

### Course I: ADVANCED ABSTRACT ALGEBRA –I:

After completing the course, a students would have:

<b>CO1</b>	the ability to understand the concept of Automorphism and Normal, Subnormal, and composite series and prove Jordan-Holder's Theorem.
<b>CO2</b>	explain Commutator subgroup, define Solvable series and solvable groups, and understands Central series and Nilpotent groups
<b>CO3</b>	understands Extension fields, roots of polynomials, define Algebraic and transcendental Extensions and define Splitting Fields, Separable and inseparable Extensions.
<b>CO4</b>	understands field, Perfect fields, Finite fields and define Algebraically closed fields
<b>CO5</b>	define Automorphisms of Extensions, state and prove Fundamental theorem of Galois theory and solve polynomial equations by radicals.

## Course - II REAL ANALYSIS:

After completing the course students must be able to

CO:1	integrate functions of a real variable in the sense of Riemann – Stieltjes and understand Properties of integral.
CO:2	understand how to integrate vector valued functions, state and apply Riemann's theorem and understand the concept of pointwise and uniform convergence applied in Sequences and series of functions.
CO:3	understand Cauchy criterion for uniform convergence and how to apply Weierstrass M-test, Abel's and Dirichlet's test for uniform convergence and relation Between uniform convergence and continuity and understand uniform convergence and differentiation State Weierstrass approximation theorem.
CO:4	understand theorems on Power series, define linear transformations, apply chain rule in partial derivatives
CO:5	state the Implicit function theorem, Jacobians, understand how to compute Jacobians and its application to show variables are independent or dependent.

## Course -III TOPOLOGY-I:

After completing the course students must be able to

CO:1	understand Countable and Uncountable sets, define Infinite sets and the Axiom of Choice, understand Cantor's theorem and the continuum hypothesis, and know about Zorn's lemma, Well ordering theorem.
CO:2	define Topological spaces with examples, understand Closed sets, Closure, Dense subsets, Neighbourhoods, Interior, exterior and boundary. Accumulation points und derived sets.
CO:3	define Bases and subbases, know about Subspaces and relative topology, Define Product Topology, Metric Topology.
CO:4	understand the definition of First and Second countable spaces, know about Covering and Lindelofs spaces, understands Separable spaces, second countability and Separability and known relation between them.
CO:5	understand the definition of Connected spaces, know about Connectedness on real line define Components, Path connectedness, locally connected spaces.

## Course IV COMPLEX ANALYSIS-I:

After completing the course students must be able to:

CO:1	understand the concept of complex integration, state and use Cauchy's theorem, Cauchy's integral Formula to evaluate the complex integral and understand higher Order derivatives.
CO:2	understand How to apply Morera's theorem, Cauchy's inequality, state and use Liouville's theorem, state and use the fundamental theorem of Algebra and use Taylor's theorem for power series representation.
CO:3	state & apply Maximum modulus principle, Schwarz lemma, expand function using Laurent's theorem, classify singularities and poles, Explain the argument principle, and understand Rouché's theorem inverse function theorem.

CO:4	understand Mobius Transformations, define Fixed Points, Cross Ratio, understand Bilinear transformations, their properties, and classifications, define Conformal mappings and explain conformal mappings and know about meromorphic functions.
CO:5	compute the residues and evaluate complex integrals using the residue theorem, understands Contour integration and define branches of many valued functions.

### **Course V: PROGRAMMING IN 'C'-I (OPTIONAL):**

After completing the course students must be able to:

CO:1	understand programming languages and their purpose.
CO:2	understand C Essentials.
CO:3	differentiate between variables and constraints and how to use them in functions.
CO:4	understand different data types used in C.
CO:5	understand data type other than basic data types and how to types cost.

### **Course - VI : ADVANCED ABSTRACT ALGEBRA –II:**

After completing the Course the students must be able to:

CO:1	understand definition of Module, sub module and how prove their problems, define Quotient Modules and theorems based on the concept of homomorphism
CO:2	understand different types of Modules and their relation between them and state Schur's Lemma.
CO:3	understand definition of Noetherian and Artinian modules and state Hilbert basis theorem and applications.
CO:4	understand Uniform, Primary Modules and understands Noether-Lasker theorem and its uses.
CO:5	understand Algebra of linear transformations, Characteristic roots, Similarity of linear transformations, Procedure of Reduction to triangular forms, Nilpotent transformations, Index of nilpotency and Invariants of a nilpotent transformation and state the primary decomposition theorem.

### **Course VII : LEBESGUE MEASURE AND INTEGRATION:**

After completing the course students must be able to:

CO:1	understand Lebesgue outer measure, Measurable sets, Regularity. Measurable functions, results on Borel and Lebesgue measurability and define non-measurable sets.
CO:2	understand how to integrate non-negative functions and understand Integration of Series and results based on Riemann and Lebesgue integrals
CO:3	understand the concept of functions of bounded variation, Understands Lebesgue Differentiation Theorem, results of Differentiation and Integration.
CO:4	understand The $L^p$ spaces, Convex functions, Jensen's inequality, Hölder and Minkowski inequalities and how to apply Completeness of $L^p$ .
CO:5	understand how to find Dual of space, Convergence in Measure, Uniform convergence and almost uniform convergence and their relation.

**Course – VIII: TOPOLOGY-II:**

After completing the course students must be able to:

CO:1	understand Separation Axioms and their characterization, Urysohn's lemma and Tietze extension theorem.
CO:2	understand compactness, Sequentially and countably compact sets and their properties, Local Compactness and one point compactification and Stone-Cech compactification.
CO:3	define Tychonoff product and product spaces and understand use of Compactness and connectedness in product spaces, embedding lemma and Tychonoff embedding.
CO:4	understand nets and filters and example, Convergence of nets and filter and Ultrafilters and compactness.
CO:5	understand Homotopy of paths, The fundamental group, Covering spaces and The fundamental theorem of algebra.

**Course – IX : COMPLEX ANALYSIS-II:**

After completing the course students must be able to:

CO:1	understand Weierstrass' factorisation theorem, Gamma function and its properties, Riemann Zeta function and how to apply Riemann's functional equation
CO:2	understand Runge's theorem, Mittag-Leffler's theorem, analytic continuation, and uniqueness of direct analytic continuation and how to check uniqueness of analytic continuation along a curve.
CO:3	know about Schwarz Reflection principle, understands Monodromy theorem and its consequences and Harmonic functions on a disk.
CO:4	understands Harnack's inequality and theorem, Green's function, Canonical products, Jensen's formula. Poisson - Jensen formula, Hadamard's three circles theorem, Order of an entire function, Exponent of Convergence.
CO:5	understand the range of an analytic function, Bloch's theorem, The little Picard theorem. Schottky's theorem and Montel Caratheodary and great Picard theorem.

**Course X :PROGRAMMING IN 'C'-II (OPTIONAL):**

After completing the course students must be able to :

CO:1	understand Control flow structure of programme using loops.
CO:2	understand the use of Break and continue statement and the goto statement infinite loops.
CO:3	understand all the types of Operators which can be used in C Programming.
CO:4	understand different derived variables & storage classes
CO:5	understand the Register Specifier Structures and Unions.

**Course - XI: INTEGRATION THEORY AND FUNCTIONAL ANALYSIS-I:**

After completing the course students must be able to:

CO:1	understand signed measure, mutually singular measure, Hahn decomposition theorem, Radon Nikodim theorem, State Lebesgue decomposition and Riesz representation theorem.
CO:2	understand Outer measure, product measures, theorems related to them: Extension theorem, Caratheodory theorem & Fubini's theorem.
CO:3	understand Normed linear spaces, Completeness, Banach Space, Finite dimensional Normed Spaces and Subspaces and definition of Quotient Normed linear space.
CO:4	learn about Compactness and finite dimension, Linear Operators, Bounded and Continuous Linear Operators.
CO:5	understand Linear Functionals, Linear Operators and functional on finite dimensional Spaces and Normed Spaces of Operators and Dual Space.

**Course : XII :ADVANCED SPECIAL FUNCTION-I:**

After completing the course students must be able to:

CO:1	understand Gamma and Beta Functions and Mascheroni Constant.
CO:2	learn about how to find value of Beta function, understand Legendre's duplication formula, and Gauss multiplication theorem.
CO:3	understand Hypergeometric and Generalized Hypergeometric functions.
CO:4	understand Contiguous function relations and Hyper geometrical differential equation and its solutions.
CO:5	understand Elementary series manipulations, Simple transformation, relations between functions of $z$ and $1-z$ .

**Course – XIII : OPERATIONS RESEARCH-I: (OR-I)**

After completing the course students must be able to:

CO:1	understand the Origin & development of OR Necessity of OR in Industry, Case studies of OR. Model in OR, Main Face of OR uses and limitation of OR, Scope of OR, Role of OR in decision making.
CO:2	understand the procedure to formulate LPP, Graphical Solution Method. Graphical Solution in some exceptional cases, Slack and Surplus Variables, Limitation of L.P.P.
CO:3	understand simplex method artificial variable techniques, Big M method, two phase Method, Problem of degeneracy, it is used in data envelopment, It has strong ties to computer science and analytics.
CO:4	understand the fundamental properties of Duality, theorem of Duality.
CO:5	understand Solution of Transportation problem using North - West corner rule, Row minima, Column Minima, Matrix Minima, and VAM, apply optimality test for the initial Feasible solution, Degeneracy in T.P., Hungarian Method for assignment Problem and unbalanced assignment Problem.

**Course-XIV : INTEGRAL TRANSFORM-I (OPTIONAL):**

After completing the course students must be able to

CO:1	calculate the Laplace transform of standard functions both from the definition and by using tables, use the appropriate shift theorems in finding Laplace and inverse Laplace transforms.
CO:2	understand Laplace equations and its solution, learn about the required conditions for transforming variable or variables in functions by the Laplace transform.
CO:3	understand Laplace's wave equation and its solution under each case, learn about the application of Laplace transform in engineering analysis.
CO:4	understand how to use of available Laplace transforms tables for transformation of functions and the inverse transformation. Learn about use partial fraction and convolution methods in inverse Laplace transforms and application of Laplace transforms to solve ordinary and partial differential equations.
CO:5	learn about how to apply Laplace transforms to solve Heat conduction equation.

**Course XV : FUNDAMENTALS OF COMPUTER SCIENCE-I (OPTIONAL):**

After completing the course students must be able to:

CO:1	understand Object Oriented Programming Paradigm and Basic Concepts, Benefits and Applications of Oriented Programming.
CO:2	write a simple program in C++, Tokens, Keywords, Identifiers and Constants, Basic Data Types, User-Defined Data Types, Derived Data Types, Variables, Operators in C++, Expressions, Implicit Conversions.
CO:3	understand Operator overloading, Operator Precedence, Control Structure and know about Statements and uses.
CO:4	understand functions in C++ and their purpose.
CO:5	understand Classes and Objects.

**Course XVI : FUNCTIONAL ANALYSIS- II:**

After completing the course students must be able to

CO:1	understand Hahn-Banach theorem, Hahn-Banach theorem for complex vector space and Definition & problem based on Normed spaces, Reflexive spaces. Category Theorem and Uniform boundedness theorem.
CO:2	understand on Strong and Weak convergence, Open mapping Theorem, Closed Graph theorem, Closed range theorem.
CO:3	understand what Inner product spaces is, Hilbert space, Properties of IPS, Definition of Orthogonal sums and direct sums.
CO:4	understand Complete Orthonormal sets and Bessel's Inequality, Convergence Theorems, Fourier coefficients, Total Orthonormal sets and sequences Parseval's Relation, Riesz representation theorem.
CO:5	understand Riesz theorem, Definition of Hilbert adjoint operator, self-adjoint operators, Unitary operators and Normal operators.

**Course-XVII : ADVANCED SPECIAL FUNCTION-II:**

After completing the course students must be able to

CO:1	understand Bessel' differential equation and Generating function of $J_n(x)$ , Express poly as Legendre polynomials, Bessel's integral with index half and an odd integer.
CO:2	understand Generating function of Legendre's polynomials Rodrigues's formula, Hypergeometric forms of $P_n(x)$ , Orthogonality.
CO:3	understand Some special Properties of $P_n(x)$ , Laplace's first integral form and Orthogonality.
CO:4	understand Hermite Polynomials $H_n(x)$ , Recurrence relation and Rodrigue's Formula, Orthogonality.
CO:5	understand Laguerre Polynomials $L_n(x)$ , Generating Functions, Rodrigue's Formula, Orthogonality, Other generating function.

**Course XVIII OPERATION RESEARCH-II:**

After completing the course students must be able to:

CO:1	understand Network analysis, constraints of network, Critical Path method (CPM), PERT calculation, Resource Levelling by Network Techniques, and advances of network.
CO:2	know about Dynamic Programming, Understands Integer programming How to apply Gomory's all I.P.P.method, Branch and Bound Technique.
CO:3	understand game theory, two-person zero sum games understand Maximin-Minimax principle Games without saddle point Graphical solution of $2 \times n$ and $m \times 2$ games. Solution of Linear Programming.
CO:4	understand how to formulate nonlinear programming, Kuhn- Tucker condition, Non-negative constraints.
CO:5	understand Wolfe's Modified, simplex method, Beale's Method for Quadratic programming Scrabble programming, convex programming

**Course XIX : INTEGRAL TRANSFORM-II (OPTIONAL):**

After completing the course students must be able to

CO:1	use various methods to compute Laplace transform and solve Boundary Value Problems by using Laplace transform.
CO:2	understand Electric circuits and Application of beams.
CO:3	understand definition of complex fourier transform, application of Inversion formula, compute fourier cosine and sine transform and Application of Fourier transforms to solve differential and integral equation as well as many areas in science & Engineering.
CO:4	understand Various properties of fourier transform, Convolution theorem and its uses and prove Parseval's identity.
CO:5	compute fourier transform of derivative of function, understand Finite fourier sine & cosine transform and understands Inversion, Operational and combined properties.

**Course XX : FUNDAMENTALS OF COMPUTER SCIENCE-I (OPTIONAL):**

After completing the course students must be able to

CO:1	understand Inheritance, single. Multilevel, Multiple, Hierarchical, Hybrid Inheritance, Templates.
CO:2	use C++ streams, write functions, Expressions, Implicit conversions.
CO:3	understand Role of Database and Database systems architecture.
CO:4	understand SQL- Basic features, Integrity key, functional dependency, multi -valued functional dependency, Database design- normalization up to BCNF.
CO:5	understand Operating Systems-User interface, Memory management and Network and distributed Systems



## PROGRAMME SPECIFIC OUTCOMES (PSO) For M.Sc. PHYSICS

After completing the two-year (4 semester) M.Sc. Physics Programme a student would have:

Sr. No.	On completing the Programme, a student will be able to:
PSO 1	have a systematic and coherent understanding of basic physics including the concepts, theories and relevant experimental techniques in the domains of Mechanics, Thermal Physics, Electricity and Magnetism, Modern Physics, Optics, Mathematical Physics and of the specialized field like Nuclear and Particle Physics, Quantum Physics, Embedded Systems, etc. in their choice of Discipline Specific Elective course.
PSO 2	have a wide ranging and comprehensive experience in physics laboratory methods in experiments related to mechanics, optics, thermal physics, electricity, magnetism, digital electronics, solid state physics and modern physics. Students acquire the ability for systematic observations, use of scientific research instruments, analysis of observational data, making suitable error estimates and scientific report writing.
PSO 3	ability to relate their understanding of physics to other subjects like Mathematics, Chemistry, Computer Science or Electronics, which are part of their curriculum, and hence orient their knowledge and work towards multi-disciplinary/inter- disciplinary contexts and problems.
PSO 4	procedural knowledge that creates different types of professionals related to different areas of study in Physics and multi/interdisciplinary domains, including research and development, teaching, technology professions, and government and public service.
PSO 5	Skills in areas related to specializations, relating the subfields and current developments in the field of Physics.

## COURSE OUTCOMES (COS): M.Sc. PHYSICS

### COURSE 1 [Mathematical Physics]

	On completing the course, a student will be able to:
CO 1	apply and analyze the various vector and matrix operations for solving physical problems.
CO 2	learn the use of Laplace transform methods to solve differential equations.
CO 3	demonstrate and utilize the concepts of Fourier series, Fourier transforms and Laplace Transforms.
CO 4	solve problems in various branches of Physics as well as engineering.
CO 5	apply partial differential equations and special functions for solving mathematical problems.

### COURSE 2 [Statistical Mechanics]

Sr. No.	On completing the course, the student will be able to:
CO 1	learn to simulate onset of chaos (Fluctuations) in simple dynamical systems in various

<b>CO 2</b>	develop the concept of phase space to define and formulate the dynamical systems.
<b>CO 3</b>	identify the dynamical systems in Biology, Chemistry, Economics and computing
<b>CO 4</b>	demonstrate some simple examples of fluid flow as described in the syllabus.
<b>CO 5</b>	learn to solve the basic equations to explain the basic properties of fluids like thermal Conductivity, viscosity, mass diffusivity etc.

### **COURSE 3 [Quantum Mechanics-I]**

<b>Sr. No.</b>	<b>On completing the course, the student will be able to:</b>
<b>CO 1</b>	various experiments establishing quantum physics and their interpretation.
<b>CO 2</b>	understand Wave-particle duality, uncertainty relation and their implications
<b>CO 3</b>	solve Schrodinger equation and its simple applications in one dimensional potential problem of scattering.
<b>CO 4</b>	grasp the basic foundation of various experiments establishing the quantum physics by doing the experiments in laboratory and interpreting them.
<b>CO 5</b>	how to model a given problem such as hydrogen, particle in a box etc. atom etc using wave function, operators and solve them.

### **COURSE 4 [Electrodynamics and Plasma Physics]**

<b>Sr. No.</b>	<b>On completing the course, the student will be able to:</b>
<b>CO 1</b>	comprehend the role of Maxwell's equation in unifying electricity and magnetism.
<b>CO 2</b>	learn the implications of Gauge invariance in EM theory in solving the wave equations and develop the skills to actually solve the wave equation in various media.
<b>CO 3</b>	learn the basic physics associated with the polarization of electromagnetic waves.
<b>CO 4</b>	learn the fundamentals of plasma and application of wave propagation in magneto plasma electromagnetic waves propagating parallel and perpendicular to the magnetic field.
<b>CO 5</b>	understand the idea of electromagnetic wave propagation through wave guides and transmission lines.

### **COURSE 5 [Atomic and Molecular Physics]**

<b>Sr. No.</b>	<b>On completing the course, the student will be able to:</b>
<b>CO 1</b>	grasp the basic foundation and instrumentation of Raman Spectroscopy
<b>CO 2</b>	comprehend the Mechanism of Raman Effect: classically and quantum mechanically
<b>CO 3</b>	learn ,analyze and determine the complex molecular structure form Raman and Infrared Spectroscopy
<b>CO 4</b>	study the basic concepts of Nuclear Magnetic Resonance Spectroscopy and its instrumentation.
<b>CO 5</b>	understand the applications of electronic spectra to transition metal complexes.

### **COURSE 6 [Classical Mechanics]**

<b>Sr. No.</b>	<b>On completing the course, the student will be able to:</b>
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<b>CO 1</b>	understand analytical methods of mechanics based on 147eneralized coordinates of momenta and solve the practical problems using these concepts.
<b>CO 2</b>	understand and demonstrate the classical concepts of Physics
<b>CO 3</b>	understand the drawbacks of Newtonian Mechanics and the establishment of Classical Mechanics.
<b>CO 4</b>	apply the concepts of Poisson's Bracket algebra and its implementation in Quantum mechanical formulations.
<b>CO 5</b>	demonstrate and solve new problems dealing with the classical aspects of Physics.

#### **COURSE 7 [Quantum Mechanics-II]**

<b>Sr. No.</b>	<b>On completing the course, the student will be able to:</b>
<b>CO 1</b>	develop the variation method and applied it to Ground state of helium
<b>CO 2</b>	learn the development of time- dependent perturbation theory and WKB method and its applications to $\alpha$ -decay of radioactive nucleus.
<b>CO 3</b>	understand the phenomena of collisions and idea about center of mass and laboratory frames and their correlation.
<b>CO 4</b>	develop the methods of the Semi classical theory of radiation, Transition probability for absorption and induced emission.
<b>CO 5</b>	study about the Electric dipole and forbidden transitions and their Selection rules.

#### **COURSE 8 [Electronic Devices]**

<b>Sr. No.</b>	<b>On completing the course, the student will be able to:</b>
<b>CO 1</b>	learn basic concepts of transistors and their applications to MOSFET, JFET etc.
<b>CO 2</b>	study about junction transistor and their applications.
<b>CO 3</b>	comprehend the knowledge about different types of microwave devices including Impatt diodes and parametric devices.
<b>CO 4</b>	learn about Memory devices, Charge coupled devices.
<b>CO 5</b>	gain the knowledge about basics of digital electronics: gates and its applications.

#### **COURSE 9 [Condensed Matter Physics-I]**

<b>Sr. No.</b>	<b>On completing the course, the student will be able to:</b>
<b>CO 1</b>	learn basics of crystal structure and physics of lattice dynamics.
<b>CO 2</b>	gain knowledge of the physics of different types of material like magnetic materials, dielectric materials, metals and their properties.
<b>CO 3</b>	increase knowledge about different modes of lattice vibrations.
<b>CO 4</b>	understand the physics of insulators, semiconductor and conductors with special emphasis on the elementary band theory of semiconductors.
<b>CO 5</b>	comprehend the basic theory of superconductors. Type I and II superconductors, their Properties and physical concept of BCS theory.

**COURSE 10 [Nuclear and Particle Physics -I]**

Sr. No.	On completing the course, the student will be able to:
CO 1	understand miscellaneous aspects of nuclear structure, masses and binding energies of nuclei.
CO 2	understand Physics behind the liquid drop model, semi empirical mass formula, magnetic dipole moments, electric quadrupole moments.
CO 3	learn basic mechanism of Detectors: GM counters, scintillation detectors, semiconductor radiation detector, magnetic Beta-ray spectrometer scintillation, Gamma-ray spectrometer.
CO 4	understand the theory of nuclear forces.
CO 5	develop an understanding about Accelerators, Synchrocyclotron, proton synchrotron, variable energy cyclotron.

**COURSE 11 [Advanced Quantum Mechanics -I]**

Sr. No.	On completing the course, the student will be able to:
CO 1	learn the Fundamentals of Angular momentum matrices, Pauli's spin matrices
CO 2	formulate addition of angular momentum and find out the possible values of J-Clebsh-Gordan coefficients for $j_1=j_2=1/2$ and $j_1=1, j_2=1/2$ .
CO 3	gain knowledge about identical particles, Symmetrization postulate, Algebraic approach to Bose and Fermi statistics, Parastatistics, Quantization and spin statistics connection.
CO 4	understand basic concepts of special theory of relativity and its applications to dynamical systems of particles.
CO 5	learn determination of Klein-Gordon equation, Dirac equation

**COURSE 12 [Advanced Electronics (Digital Electronics)]**

Sr. No.	On completing the course, the student will be able to:
CO 1	design of Integrated Circuits Technology, Basic Monolithic Integrated circuits, Epitaxial growth, masking and Etching, Diffusion of impurities.
CO 2	construction and working of OP-AMPs and design waveform generator circuits.
CO 3	construction and working of OP-AMPs and design waveform generator circuits.
CO 4	construction of TTL circuits: 7400 devices, TTL characteristics, TTL overview, Encoders and Decoders.
CO 5	concept of Karnaugh maps and Karnaugh simplification.

**COURSE 13 [Condensed Matter Physics-II]**

Sr. No.	On completing the course, the student will be able to:
CO 1	defects in crystal structures.
CO 2	formation of band structure in a solid and the origin of band gap in semiconductors.
CO 3	Hall Effect and its applications
CO 4	superconductivity phenomenon and its parameters related to possible applications.
CO 5	theory of semiconductor, its classifications and applications.

**COURSE 14 [Nuclear and Particle Physics -II]**

<b>Sr. No.</b>	<b>On completing the course, the student will be able to:</b>
<b>CO 1</b>	understand the fundamental radioactivity and mechanisms- alpha, beta and gamma decay
<b>CO 2</b>	understand radioactive decays and its quantum mechanical formulations
<b>CO 3</b>	learn about classification of elementary particles
<b>CO 4</b>	have a basic understanding of Group theory and the special unitary group
<b>CO 5</b>	acquire knowledge about Quark model and explain the standard model of particle Physics.

**COURSE 15 [Advanced Quantum Mechanics -II]**

<b>Sr. No.</b>	<b>On completing the course, the student will be able to:</b>
<b>CO 1</b>	understand scattering theory and its applications.
<b>CO 2</b>	apply scattering theory in elastic and inelastic collisions.
<b>CO 3</b>	solve the equation of motion in a centrally symmetric field.
<b>CO 4</b>	learn elements of field quantization.
<b>CO 5</b>	find scattering cross-section using partial wave analysis and Born approximation techniques

**COURSE 16 [Microprocessor]**

<b>Sr. No.</b>	<b>On completing the course, the student will be able to:</b>
<b>CO 1</b>	describe architecture of microprocessor and design programs.
<b>CO 2</b>	articulate different memory interfacing schemes.
<b>CO 3</b>	articulate the programmable peripheral interface.
<b>CO 4</b>	differentiate signals and apply signal transforms
<b>CO 5</b>	understand construction and working of multivibrator and its types.

## PROGRAMME SPECIFIC OUTCOMES (PSO) For M.Sc. BOTANY

After completing the two-year (4 semester) M.Sc. Botany Programme a student would have:

<b>PSO1:</b>	understood the scope and significance of the program.
<b>PSO2:</b>	developed the skills to identify different types of plants.
<b>PSO3:</b>	developed the skills to do laboratory work from different equipments.
<b>PSO4:</b>	developed the skills related to scientific research in the area of Botany
<b>PSO5:</b>	learnt how to explain the importance of different plants to human beings.
<b>PSO6:</b>	learnt to describe the evolution, anatomy, morphology, systematic, genetics, physiology and ecology of plants, the ecological and evolutionary features of the flora and fauna in environment
<b>PSO7:</b>	knowledge about identifying and analyzing scientific problems and environmental issues using oral and written communication skills about the outcomes of such analyses.

## COURSE OUTCOMES (COS): M.Sc. BOTANY

### Course – I : Biology & Diversity of Viruses, Bacteria and Fungi :

After completion of this Course, a student will be able to:

<b>CO1:</b>	comprehend the diversity of lower cryptogams (Algae, Fungi, Bacteria, Phytoplasm and viruses.)
<b>CO2:</b>	carry out collection and study of algae, fungi, bacteria from different localities, Identification up to generic level.
<b>CO3:</b>	recognize the morphology, anatomy , physiology, reproduction and lifecycle pattern.
<b>CO4:</b>	understand their diversification and familiarize with various ecological niche,
<b>CO5:</b>	know their positive and negative values.

### Course II : Biology & Diversity of Bryophytes and Pteridophytes

<b>CO1:</b>	To know about morphological, anatomical, and developmental patterns in the bryophytes,
<b>CO2:</b>	pteridophytes and gymnosperms. To know about the reproductive parts their development and mechanism of reproduction and life cycle pattern.
<b>CO3:</b>	thallus and wood anatomy, Mechanical tissues (Collenchyma, Sclerenchyma, Stone cells— and Xylem) ,
<b>CO4:</b>	secretory tissues (Mucilage Canals, Resin canals, Nectaries, and oil glands), laticifers (Latex cells and Vessels).
<b>CO5:</b>	Economic values of the lower plants.

### **Course III: Biology & Diversity of Gymnosperms**

After successful completion of this course, a student will be able to:

<b>CO1:</b>	know about morphological, anatomical and developmental patterns in the bryophytes,pteridophytes and gymnosperms.
<b>CO2:</b>	know about the reproductive parts their development and mechanism of reproduction→ and life cycle pattern.
<b>CO3:</b>	understand thallus and wood anatomy, Mechanical tissues (Collenchyma, Sclerenchyma, Stone cells and Xylem) ,
<b>CO4:</b>	understand about Secretary tissues (Mucilage Canals, Resin canals, Nectaries, and oil glands), laticifers (Latex cells and Vessels). Economic values of the lower plants.
<b>CO5:</b>	understand Secretary tissues (Mucilage Canals, Resin canals, Nectaries, and oil glands), laticifers (Latex cells and Vessels).

### **Course IV: Plant Ecology**

On completion of this course the students will be able to:

<b>CO1:</b>	analyze various types of ecosystems,
<b>CO2:</b>	correlate different ecosystems.
<b>CO3:</b>	analyze the threat and suggest conservative measures.
<b>CO4:</b>	The students are also trained in the environmental impact analysis
<b>CO5:</b>	Analyze, monitor various physical, chemical and biological properties of soil water and air.
<b>CO6:</b>	understand the use of fertilizer, pesticides and other chemicals in agriculture and hygiene and their disposal.

### **Course V: Plant Development &Reproduction**

After successful completion of this course, students will be able to:

<b>CO1:</b>	Know about plants anatomical structure, their developmental patterns.→
<b>CO2:</b>	Identify plant reproductive partsand development of male, female gametophytes and fruits.
<b>CO3:</b>	Identify vascular tissues and its constituents by sections and maceration, wood anatomy,
<b>CO4:</b>	TS, TLS and RLS Mechanical tissues (Collenchyma, Sclerenchyma, Stone cells and Xylem) , Secretary→ tissues (Mucilage Canals, Resin canals, Nectaries, and oil glands),

<b>CO5:</b>	laticifers (Latex cells and Vessels). observe Normal and abnormal secondary growth etc
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### **Course VI: Morphology & Taxonomy of Angiosperms**

After successful completion of this course, students will be able to:

<b>CO1:</b>	understand plant morphology Description of a plant specimen.
<b>CO2:</b>	understand at least 20 locally available families of flowering plants.
<b>CO3:</b>	identify genus and species of locally available wild plants.
<b>CO4:</b>	prepare botanical keys at generic level by locating key characters.
<b>CO5:</b>	have knowledge of at least 10 medicinal plant species.
<b>CO6:</b>	have the knowledge of secondary metabolites and its use in taxonomy.

### **Course VII :Utilization & Conservation of Plant Resources**

On completion of this course, the students will be able to:

<b>CO1:</b>	understand core concepts of Economic Botany and relate with environment,
<b>CO2:</b>	understand populations, communities, and ecosystems Develop critical understanding on the evolution of concept of organization of apex new
<b>CO3:</b>	understand crops/varieties, importance of germplasm diversity, issues related to access and ownership. Develop a basic knowledge of taxonomic diversity and important families of useful plants.
<b>CO4:</b>	understand the common cultivation methods of microalgae including photobioreactors and open ponds, Seaweed bioresources etc.
<b>CO5:</b>	appreciate the diversity of plants and the plant products in human use. Understand the concept of IPR.
<b>CO6:</b>	know various legal issues related to IPR.Exploring the potential of Marine bioresources, Microbial, medicinal plants etc.Varoius phytochemical techniques, industrial process, pharmacognostic procedures, authentication of specimens, Preservation of plants and plants product.

### **Course VIII :Cell Biology of Plants**

After successful completion of this course, students will be able to :

<b>CO1:</b>	understand the cell structures in relation to function of cells the fundamental unit of life, are— concerned in this course along with molecules present in cells.
<b>CO2:</b>	apply the principles of cell biology in designing experiment, statistical analysis, and— interpretation of results.



<b>CO3:</b>	operate and solve exercise using computation statistics software.
<b>CO4:</b>	get acquainted with basic approach in the research methodology.
<b>CO5:</b>	carry out isolation of plant DNA and its quantification. Isolation of RNA and its quantitation Estimation of seed proteins.

### **Course IX: Plant Physiology and Biochemistry.**

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

<b>CO1:</b>	be familiar with various physiological
<b>CO2:</b>	understand the various aspects involved in the plant development.
<b>CO3:</b>	understand the role of enzymes in it and mechanism of photosynthesis, respiration, nitrogen and lipid metabolism.
<b>CO4:</b>	isolate starch, pectine and various nutritive products from the plants.
<b>CO5:</b>	quantify the plant contents and its biochemistry and mode mechanism of synthesis etc.

### **Course X : Cell Biology, Genetics and Biotechnology**

After successful completion of this course, students will be able to understand:

<b>CO1:</b>	the cell structures in relation to function of cells the fundamental unit of life, are concerned in this course along with molecules present in cells.
<b>CO2:</b>	apply the principles of cell biology in designing experiment,
<b>CO3:</b>	do statistical analysis, and interpretation of results Operate and solve exercise using computation statistics software.
<b>CO4:</b>	get acquainted with basic approach in the research methodology.
<b>CO5:</b>	do isolation of plant DNA and its quantification. Isolation of RNA and its quantitation, Estimation of seed proteins.

## PROGRAMME SPECIFIC OUTCOMES (PSO) For M.Sc. COMPUTER SCIENCE

After completing the two-year (4 semester) M.Sc. Botany Programme a student would have:

<b>PSO1:</b>	provide technology-oriented and creative solutions.
<b>PSO2:</b>	develop skills to learn new technology
<b>PSO3:</b>	make programmes using programming languages such as Java, C++, HTML, SQL, etc...
<b>PSO4:</b>	apply computer science theory and software development concepts to construct computing-based solutions
<b>PSO5:</b>	design and develop computer programs/computer-based systems in the areas related to algorithms, networking, web design, cloud computing, Artificial Intelligence, Mobile applications.
<b>PSO6:</b>	teach software programming, system and network administration, web designing for computer science and computer applications.

## COURSE OUTCOMES (COS): M.Sc. COMPUTER SCIENCE

<b>Course I : Computer Organization and Architecture</b>	
After successful completion of the course, a student would have the knowledge of:	
<b>CO1</b>	the basic structure, Operation and characteristics of digital computer.
<b>CO2</b>	designing simple combinational digital circuits based on given parameters
<b>CO3</b>	the working of arithmetic and logic unit.
<b>CO4</b>	hierarchical memory system including cache memories and virtual memories.
<b>CO5</b>	the contributions of Indians in the field of computer architecture and related technology.

<b>Course II: OOP using C++</b>	
After successful completion of the course, a student would have the knowledge of:	
<b>CO1</b>	the principles of oops concept and control structure
<b>CO2</b>	analyzing the concept of classes and object, array, functions, constructor, and destructor
<b>CO3</b>	the concept of inheritance and classification, pointer's virtual function and polymorphism
<b>CO4</b>	working with files, file pointers and its manipulations
<b>CO5</b>	the concept of function templates and exception handling

<b>Course III: Operating System and System Software</b>	
After successful completion of the course, students would have the knowledge of:	
<b>CO1</b>	the importance of computer system resources and the role of operating system in their management policies and algorithms.
<b>CO2</b>	various process management concepts and can compare various scheduling techniques, synchronization, and deadlocks.
<b>CO3</b>	identifying the best suited process management technique for any process.
<b>CO4</b>	various file operations, file allocation methods and disk space management.
<b>CO5</b>	operating the Linux system,

<b>Course IV: Discrete Mathematical Structure</b>	
After successful completion of the course, students would have the knowledge of:	
<b>CO1</b>	the concepts of mathematical logic
<b>CO2</b>	the concepts of sets, relations, and functions.
<b>CO3</b>	performing the operations associated with sets, functions, and relations.
<b>CO4</b>	relating practical examples to the appropriate set, function, or relation model, and interpret the associated operations and terminology in context. To use Graph Theory for solving problems
<b>CO5</b>	generating functions and recurrence relations.

<b>Course V : OOP using C++(Practical – I)</b>	
After successful completion of the course, students would have the knowledge of:	
<b>CO1</b>	using recursive techniques, Pointers and searching methods in programming.
<b>CO2</b>	programming languages, number systems, peripheral devices, networking, multimedia and internet concepts.
<b>CO3</b>	executing of programs written in C++ language.
<b>CO4</b>	performing input and output operations using programs in C++.
<b>CO5</b>	write programs that perform operations on arrays.

<b>Course VI : Operating System (Practical - II)</b>	
After successful completion of the course, students would have the knowledge of:	
<b>CO1</b>	fundamental operating system abstractions such as processes, threads, files, semaphores, IPC abstractions, shared memory regions, etc.,
<b>CO2</b>	analyzing important algorithms. Process scheduling and memory management algorithms.
<b>CO3</b>	categorizing the operating system's resource management techniques, dead lock management techniques, memory management techniques.
<b>CO4</b>	performing OS tasks in Red Hat Linux Enterprise.
<b>CO5</b>	doing administration Use Vi Editor.

<b>Course VII : Data Structure &amp; Algorithm using C++</b>	
After successful completion of the course, students would have the knowledge of:	
<b>CO1</b>	the principles of oops concept and control structure.
<b>CO2</b>	the concept of classes and object, array, functions, constructor and destructor
<b>CO3</b>	the concept of inheritance and pointers virtual function & polymorphism.
<b>CO4</b>	working with files, file pointers and its manipulations.
<b>CO5</b>	the concept of function templates and exception handling.

<b>Course : VIII :DBMS</b>	
After successful completion of the course, students would have the knowledge of:	
<b>CO1</b>	the basics of DBMS, data models, a schema, E-R diagram, relational database and benefits of database.
<b>CO2</b>	designing a good database using normalization, decomposition and functional dependency.
<b>CO3</b>	the concepts of database architecture, client server architecture, parallelism concepts and distributed database concepts
<b>CO4</b>	indexes, sequences, data integrity, creating and maintaining tables and user privileges in RDBMS.
<b>CO5</b>	the basic concepts of PL/SQL programming, cursors, triggers, packages, procedures, functions and transactions.

<b>Course IX: Data Communication and Computer Networks</b>	
After successful completion of the course, students would have the knowledge of:	
<b>CO1</b>	network communication using the layered concept, Open System Interconnect (OSI) and the Internet Model.
<b>CO2</b>	various types of transmission media, network devices; and parameters of evaluation of performance for each media and device.
<b>CO3</b>	the concept of flow control, error control and LAN protocols; to explain the design of, and algorithms used in, the physical, data link layers.
<b>CO4</b>	the working principles of LAN and the concepts behind physical and logical addressing, subnetting and supernetting.
<b>CO5</b>	the functions performed by a Network Management System and to analyze connection establishment and congestion control with respect to TCP Protocol.

<b>Course X: Theory of Computation</b>	
After successful completion of the course, students would have the knowledge of:	
<b>CO1</b>	the concepts of formal languages of finite automata techniques.
<b>CO2</b>	designing Finite Automata's for different regular expressions and languages.
<b>CO3</b>	constructing context free grammar for various languages
<b>CO4</b>	solving various problems of applying normal form techniques, push down automata and Turing Machines.
<b>CO5</b>	applying the knowledge, techniques, and skills in the development of a software product.

<b>Course XI : Data Structure &amp; Algorithm using C++ (Practical – I)</b>	
After successful completion of the course, a student will be able to:	
<b>CO1</b>	design, implement, test, debug and document programs in C++.
<b>CO2</b>	apply fundamental algorithmic problems including type casting, inheritance, and polymorphism
<b>CO3</b>	develop solutions for a range of problems using objects and classes.
<b>CO4</b>	programs to demonstrate the implementation of constructors, destructors and operator overloading
<b>CO5</b>	understand generic programming, templates, file handling

<b>Course XII : DBMS &amp; RDBMS (Practical – II)</b>	
After successful completion of the course, a student will be able to:	
<b>CO1</b>	implement Basic DDL, DML and DCL commands
<b>CO2</b>	understand Data selection and operators used in queries and restrict data retrieval and control the display order
<b>CO3</b>	write sub queries and understand their purpose.
<b>CO4</b>	join multiple tables using different types of joins
<b>CO5</b>	understand the PL/SQL architecture and write PL/SQL code for procedures, triggers, cursors, exception handling etc..

<b>Course XIII : OOP with JAVA</b>	
After successful completion of the course, a student will be able to:	
<b>CO1</b>	understand basic oops concept. Java evaluation & implementation overview of java.

<b>CO2</b>	know operators and expressions, decision making and branching, Decision making and looping.
<b>CO3</b>	able to understand classes and methods, array strings and vectors, interface concept instead of multiple inheritances.
<b>CO4</b>	packages of java, multithreaded programming contains synchronization, managing errors and exceptions handling.
<b>CO5</b>	able to perform applet programming designing HTML, graphic Programming.

#### **Course XIV : Programming with Visual Basic**

After successful completion of the course, a student will be able to:

<b>CO1</b>	know the working environment of visual basics using a control structure
<b>CO2</b>	understand the module, components and menu editor and its concept in a simple manner
<b>CO3</b>	analyze a controls such text box, rich text box and etc...write coding easily
<b>CO4</b>	develop the project with database using ODBC, DAO, ADO and visual data manager
<b>CO5</b>	include the active controls and other control to perform particular task

#### **Course : XV : System Analysis & Design**

After successful completion of the course, a students will be able to:

<b>CO1</b>	understand the significance of system analysis, design and development
<b>CO2</b>	understand the process of system modelling in detail
<b>CO3</b>	use the engineering technique of requirement elicitation
<b>CO4</b>	understand cost model techniques in software engineering
<b>CO5</b>	make use of system testing and validation in the development life cycle

#### **Course XVI : Compiler Design**

After successful completion of the course, a student will be able to:

<b>CO1</b>	understand the system software such as assemblers and microprocessors.
<b>CO2</b>	understand the concept of loader and linker
<b>CO3</b>	develop top down and bottom up parsers.

<b>CO4</b>	develop top down and bottom up parsers.
<b>CO5</b>	understand SDD, SDT, intermediate code generation and machine code generation

<b>Course XVII : Programming with JAVA (Practical – I)</b>	
After successful completion of the course, a student will be able to:	
<b>CO1</b>	develop Java program using packages, inheritance and interface.
<b>CO2</b>	create Multithreaded programs.
<b>CO3</b>	write Java programs to implement error handling techniques using exception handling and develop programs using class and inputs from keyboard.
<b>CO4</b>	develop graphical User Interface using AWT.
<b>CO5</b>	demonstrate event handling mechanism.

<b>Course XVIII : Artificial Intelligence</b>	
After successful completion of the course, a student will be able to:	
<b>CO1</b>	solve basic AI based problems.
<b>CO2</b>	define the concept of Artificial Intelligence.
<b>CO3</b>	apply AI techniques to real-world problems to develop Knowledge representation.
<b>CO4</b>	select appropriately from a range of techniques when implementing Expert systems.
<b>CO5</b>	develop an understanding the basic structure of a neural network.

<b>Course XIX : Computer Graphics &amp; Multimedia</b>	
After successful completion of the course, a student will be able to:	
<b>CO1</b>	understand the basics of computer graphics, different graphics systems and applications of computer graphics.
<b>CO2</b>	discuss various algorithms for scan conversion & filling of their comparative analysis.
<b>CO3</b>	extract scene with different clipping methods and its transformation to graphics display device.
<b>CO4</b>	explore projections & visible surface detection techniques for display of 3D scene on 2D screen.
<b>CO5</b>	render projected objects to naturalize the scene in 2D view and use of illumination models for this.

<b>Course XX : Software Engineering</b>	
After successful completion of the course, a student will be able to:	
<b>CO1</b>	able to apply the concepts of software engineering which is essentially important while working on big modules and or projects.
<b>CO2</b>	understand the concept of system and able to analyze its feasibility study

<b>CO3</b>	understand software process framework , requirement modeling approaches software design, software quality
<b>CO4</b>	software design, software quality
<b>CO5</b>	able to apply software metrics and software testing.
<b>Course XXI : Internetwork Applications</b>	
After successful completion of the course, a student will be able to:	
<b>CO1</b>	develop basic skills of secure Network Architecture and explain the theory behind security
<b>CO2</b>	study the basic idea behind cryptography and design the algorithm to make a secure communication
<b>CO3</b>	identify common Network vulnerabilities and attacks
<b>CO4</b>	knowledge about the authentication and various techniques used for the authentication.
<b>CO5</b>	design the cryptographic protection mechanism