



GURU NANAK COLLEGE (AUTONOMOUS)
Reaccredited at "A" Grade by NAAC Affiliated to the University of Madras

PROGRAMME OUTCOME

U.G IN HUMANITIES

- PO1:** Able to enrich their **knowledge** in political and socio-economic issues
- PO2:** Able to come out as good citizens of India by giving respect to the **Ethical** values of democracy systems and principles of human rights.
- PO3:** Able to **understand** the concept of Inclusive Growth and its importance in socio-economic development.
- PO4:** Able to **link** all the theories with concrete realities and analyse the extent of their application in regional, national and global contexts.
- PO5:** Able to **analyse** the budget of the government in a neutral manner and can provide suggestions.
- PO6:** Able to **understand** the concepts and measurement of growth rate, production and productivity of an economy and able to **calculate** the GDP by using both Quicker estimate and yearly estimate.
- PO7:** Able to start NGOs (Non-Governmental Organisations) through proper **social interaction** between different sectors and different groups of people to improve the socio-economic condition of our country
- PO8:** Able to understand the concept of Green GDP, Green Society and all **sustainable goals** of United Nations for **sustainable development**.

P.G IN HUMANITIES.

- PO1:** Through **effective communication** skill along with sound knowledge in political and socio economic issues of past and present, they will be able to analyse all the issues critically and will be employable as journalist, Research Assistant and Research Associate.
- PO2:** Able to score more marks in civil service examinations with the sound knowledge in the **applicability** of all theories in the real world.
- PO3:** By **applying** economic, defence and political theories in an **appropriate** manner, they will be able to maintain armed forces and industrial security services without affecting

the development of a country.

- PO4:** Able to **recognise** different value systems of the society and provide policy suggestions to achieve inclusive growth.
- PO5:** Able to do more **research** by applying all environmental and welfare theories in the real world, evaluate, analyse and **provide policy suggestions** to achieve high growth with lesser environmental degradation.
- PO6:** Able to apply **academic literacy skills** when submitting reports, projects and research.
- PO7:** Able to **analyse and examine** the socio economic policies and programs of the government and able to provide proper **policy suggestions** in making changes in the monetary and fiscal policies to maintain stability in an economy.
- PO8:** Able to become as good academicians (Professors) with sound knowledge in political and socio-economic aspects. Through self motivation and life long learning attitude, they will be able to **relate the relationship between different disciplines**.
- PO9:** Able to Understand all **sustainable goals** of the United Nations Organisation (UNO), and able to find out different possible ways by which each and every Sustainable goal could be achieved.
- PO10:** Able to understand the concepts of Green Growth, Green Society and find out the problems faced by an economy or society during the implementation of these concepts and through the research work they will be able to **find solutions to all those problems**.

U.G IN COMMERCE

- PO1: Critical Thinking:** To acquire analytical and problem solving skills in various disciplines of management, business, accounting, tax, finance and law.
- PO2: Effective Communication:** Communicate effectively with the accounting professional & IT community and with society at large. To face the communication challenges of industry by writing effective reports, make effective presentations, and give and receive clear instructions.
- PO3: Accounting Application:** Apply the knowledge of accounting fundamentals, and techniques to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to the professional accounting practice.
- PO4: Ethics:** Apply ethical principles and commit to professional ethics and

responsibilities and norms of the accounting practices.

PO5: Knowledge for Employability: The students will be ready for employment in functional areas like accounting, taxation, banking, insurance and corporate law. An attitude for working effectively and efficiently in a business environment. Learners will gain knowledge of various disciplines of commerce, business, accounting, economics, and finance, auditing and marketing.

PO6: Industrial Exposure: To acquire hands on experience in various aspects, administration abilities, managerial and leadership skills through internships and projects to cope up with the contemporary, national and global level curricular and co-curricular aspects.

P.G IN COMMERCE

PO1: Knowledge: Aims to provide students with the knowledge, tools of analysis and skills with which to understand and participate in the modern business, accounting and economics world, to them for subsequent studies and to achieve success in their career.

PO2: Core competence: Demonstrated major theories and generates realistic solutions based on government and firms' policy as well as will equip the students to face the modern day challenges in commerce and business.

PO3: Problem solving skills: Demonstrate the critical thinking mind-set and the ability to identify and formulate research problems, research literature, design tools, analyse and interpret data, and synthesize the information to provide valid conclusions and contextual approaches across a variety of subject matter.

PO4: Industry Interaction: Exhibit self-confidence and awareness of general issues prevailing in the society and communicate effectively with the accounting, commerce, management, business, professional fraternity and with society at large through digital and non-digital mediums and using a variety of modes such as effective reports & documentation, effective presentations, and give and receive clear instructions.

PO5: Acquisition & Employability skills: To provide well trained professionals for the Industries, Banking Sectors, Insurance Companies, Financing companies, Logistics, distribution channel management, Application of Information

technology in Business, Alternative investment management technique etc., to meet the well trained manpower requirements.

PO6: Practical Application: To educate and train the students to solve practical problems in the realm of commerce and business management through case study analysis, role playing and brainstorming methods.

U.G IN MANAGEMENT

PO1: Communication Skills:

Ability to prepare appropriate business documents.

PO2: Critical Thinking:

Learn how to use analytical tools to address business issues.

PO3: Global Perspective:

Understand the issues and challenges of managing global enterprises.

Apply specific disciplinary knowledge in a global context.

PO4: Knowledge Acquisition:

Acquisition of specific business discipline knowledge.

PO5: Working Collaboratively:

Learning how to make positive contributions to the team.

P.G IN MANAGEMENT

PO1: Effective business communication: An ability to communicate effectively in both verbal and non-verbal means to different stake holders.

PO2: Professional behavior: An understanding of professional integrity, and ethics in carrying out the business.

PO3: Marketing Skills: Developing persuasion skills to cater to diverse markets and applying the appropriate strategies in different stages of customer engagement.

PO4: Analytical Skills: Extrapolating and interpreting data for effective decision making.

PO5: People management: An ability to function effectively in a team and to be a role model for others to emulate.

PO6: Critical thinking for problem solving: Differentiating symptoms & problems and framing best course of action after evaluation of all possible alternatives.

PO7: Research orientation: An ability to use information and knowledge effectively by being scientific in approach.

PO8: Entrepreneurship: Inculcating innovation, risk taking ability and internal locus of control.

PO9: Experiential learning: Exposing the students to get real time experience to make them corporate ready.

U.G IN SCIENCES

PO1: Dissipate knowledge of mathematics and science, for bringing out new concepts that simplifies complex problems

PO2: Subject wisdom gained for multitasking that is required for facing challenges in the competitive world

PO3: Demonstrate creativity through the skills acquired for societal upliftment

PO4: Conduct in a dignified and friendly manner while working in a team

PO5: Communicate effectively to achieve professional and psychological growth

P.G IN SCIENCES

PO1: Conceive new scientific concepts to solve complex scientific problems

PO2: Communicate effectively and use e-media resources for holistic development

PO3: Employ innovative greener ideas to support sustainable development of the society

PO4: Lead a team with integrity and follow professional ethics to reach higher levels in the career

PO5: Execute interdisciplinary research attitude to develop products that can be patented

PROGRAMME SPECIFIC OUTCOMES & COURSE OUTCOMES

1. B.A ENGLISH

PROGRAM SPECIFIC OUTCOMES:

- PSO1:** Comprehend various forms of literature like prose, poetry, drama and fiction
- PSO2:** Apprehend different cultures and cultural sensibilities around the world
- PSO3:** Perspectives of literary movements that existed in different ages.
- PSO4:** Develop the knowledge of grammatical system of English language.
- PSO5:** Define literary theory and terms in criticism.
- PSO6:** Develop four language skills LSRW.
- PSO7:** Write analytically in different formats like essays, reviews, research papers etc.
- PSO8:** Scope of employability and entrepreneurship in the field of Media and Journalism, Teaching, Public Relations, Human Resource, Civil Service, Creative Writing etc.

B.A ENGLISH COURSE OUTCOMES:

Course Title: Age of Chaucer

- CO1:** Explain the prose in respective age.
- CO2:** Determine the prose style in detail.
- CO3:** Identify the poetry literacy way in a specific text.
- CO4:** Define the thorough observation of drama with a respective age and text.
- CO5:** Analyse the equipped with the text .

Course Title: Age of Milton and Restoration Age

- CO1:** Analyzes English literary tradition from King Charles II to the age of Romanticism.
- CO2:** Describe and discuss poems from John Milton to John Keats.
- CO3:** Distinguish literary texts that reflect the socio-cultural and political interest of the period.
- CO4:** Demonstrate the different literary cultures in relation to the drama.
- CO5:** Categorize the genre of novel and short story.

Course Title: History of English Literature I

- CO1:** To describe how literature influences the social and political history of each period.
- CO2:** To describe and identify the poetry of major writers.
- CO3:** Explain various schools and forms of drama of major writers.

CO4: Identify the literary, cultural, historical, political influence of fictional works in the literary world.

Course Title: Romantic Age

CO1: Describe the students with the outline of the prose through the respective age .

CO2: Determine the romantic age authors and their style.

CO3: Explain the poems of poetic devices to the specific text.

CO4: Analyse the background of the drama and its culture to the respective era .

CO5: Identity the experiment of novel concepts and its structure.

Indian Writing in English

CO1: Describe and differentiate the varieties of prose of major Indian writers.

CO2: Identify the various forms and types of poetry.

CO3: Specify the figurative language used in poems.

CO4: Analyze the use of myth in Indian writing in English.

CO5: To explain the issue or subalternity and regionality in the literary domain.

History of English Literature II

CO1: Explain the importance of brevity in writing.

CO2: Compare English Literature of one period with that of another.

CO3: Demonstrate major writers and their works in chronological order.

CO4: Explain the ethical interpreters of literary text in English by nurturing their ability to understand drama.

CO5: Identify the literary cultural, historical, political influencers of fictional works in the literary world.

Course Title: Shakespeare

CO1: Describe and discuss the themes brought up in Shakespeare's plays, poems and sonnets.

CO2, CO3, CO4 & CO5:

Analyze the structures and organizations of his dramatic works. Identify major literary characters in Shakespeare's works.

Course Title: Victorian Age

CO1: Analyze the stylistic use of language .

CO2: Define various elements of poetry such as diction, tone, form, genre.

CO3: Recognize the rhythms, metrics and other musical aspects of poetry.

CO4: Demonstrate social and artistic movements that shaped theatre and dance as we know it today.

CO5: Make us of the beauty of coherence of language and literature.

Course Title: Literary Forms

CO1: Explain the introduction of literary terms .

CO2: Identity the poetic devices to the connection of poems .

CO3: Describe the process and origin of the development of drama in its structure with the text.

CO4: Define the various types of novel with its structure .

CO5: Analyse the different ways of essay with the text.

Course Title: Modern Age

CO1: Gives insight into the major issues related to the social and cultural contents of the

CO2: Recognize and analyse poetry I terms of different schools of poetry

CO3: Interpret different genres of drama like comedy, tragedy, farce and melodrama.

CO4: Perceive trends that prevailed in writing 20th century drama.

CO5: Comprehend the development of 20th century fiction and elements of fiction- style, narrative forms and point of view.

Course Title: Phonetics and Phonology

CO1: Comprehend the articulation of English speech sounds.

CO2: Ability to read and write phonetic transcription.

CO3: Identify the manner of articulation and classification of vowels and consonants.

CO4: Adopt the functions of stress and intonation.

CO5: Differentiate accents of British English and American English.

Course Title: Media and Communication

CO1: Acquire in-depth knowledge of contemporary issues in media and communication.

CO2: Make use of recent developments and current debates in media and communication

through the range of modules.

CO3: Explain various specialist sub-disciplines, including big data, digital cultures , mobile media, news and information.

CO4: Explain the methods of production and technological practices and relevant social issues.

CO5: Demonstrate proficiency in writing in one or more professional media writing applications.

Course Title: American Literature

CO1: Analyse American prose as an expression of individual or communal values curbs within social, political and cultural perspectives of different periods in American literature

CO2: Demonstrate American literary movements through verses of the ag

CO3: Trace the development of characteristic styles of expression through American ficti

CO4: Define the diverse dramatic styles or forms that existed though the ages in America.

CO5: Express the aesthetic ideas present in both fiction and drama.

Course Title: Introduction to Linguistics

CO1: Apprehend and express nature and function of language.

CO2: Develop the knowledge of grammatical system of English language.

CO3: Analyse language variation, historical, social and regional dialects.

CO4: Illustrate the differences in phonetics, phonology, morphology, syntax, semantics and pragmatics.

CO5: Gain integrated knowledge of four language skills LSRW.

Course Title: Women's Writing

CO1: Perceive the concepts like women's liberty, empowerment, feminism and movements.

CO2: Examine various literary selections of fiction, drama and poetry that focuses women's life

CO3: Explain the development, themes and narrative perspectives of various works of women's writing.

CO4: Identify the key point of a selection of feminist theory and apply them as a context for reading literary texts.

CO5: Describe women's writing and critically analyse the varied views expressed in the text.

Course Title: Literary Criticism

- CO1:** Define representative literary and cultural texts in diverse contexts.
- CO2:** Interpret the critical ideas, values and themes in the literary texts.
- CO3:** Apply critical and theoretical approaches to the literary pieces of the past and the present.
- CO4:** Write analytically in different formats like essays, reviews, research papers etc.
- CO5:** Evaluate literary texts and write critical views about the text.

Course Title: Travel Writing

- CO1:** Recognize about the historical places.
- CO2:** Realize the cultural heritage of the places.
- CO3:** Familiarize with writing styles of various travel writers.
- CO4:** Improve the factual knowledge and problem solving skills.
- CO5:** Work on adaptability, cross-cultural competence and attitude change.

Course Title: Indian Literatures in Translation

- CO1:** Examine the issues discussed in the text in the socio-historic and cultural context.
Compose an article in technical writing genre.
- CO2:** Recognize poetry from a variety of cultures, languages and historic periods.
- CO3:** Make use of the vocabularies and to develop an appreciation of language.
- CO4:** Conceptualize various types of Drama such as Tragedy, Comedy, Farce, Melodrama etc.
- CO5:** Explain the elements of fiction such as Narrative Techniques, setting, point of view, style.

Course Title: European Drama

- CO1:** The students will identify the familiar of European Drama.
- CO2:** Analyse the different social issues in Europe.
- CO3:** Determine the complex issues in European Literature.
- CO4:** Explain the regional level of understanding.
- CO5:** Describe the awareness of the changes and developments in the European Drama

Course Title: World literature

- CO1:** Analyze the major writers and their works.
- CO2:** Demonstrate and differentiate, variety of prose.
- CO3:** Explain and delineate the different types of drama by major writers.

CO4: Assess mastery in aspects of plot, setting, themes,

Course Title: Modern Latin American Literature

CO1: Realize that anything can be a subject in an essay.

CO2: Explain the historical background of Latin America and Spain.

CO3: Interpret foundational knowledge relating to historical, socio-cultural, geographic and economic conditions in Latin America.

CO4: Discuss basic methodologies of social science research and writing as well as humanities/language based research.

CO5: Critically analyze ideas, evidence and arguments relating to a current topic or a significant historical event/process in Latin America.

Course Title: Interpretation of literature

CO1: Define kinds of poetry and types of poetry.

CO2: Demonstrate poetry using poetic devices and metrical analysis.

CO3: Explain dramatic devices used and assess the genre in which it is written.

CO4: Illustrate characterization and its importance in drama and fiction.

CO5: Validate the forms of literature by applying literary devices.

2. B.A DEFENCE AND STRATEGIC STUDIES

PROGRAM SPECIFIC OUTCOMES:

PSO1: Define the basic concepts of National security and Strategic aspects and different dimensions and approaches to National security.

PSO2: Explain the constitutional framework of various states and Analyse the current socio, political, economic and military situation of the state under varying competitive conditions

PSO3: Assess and evaluate the national, regional and international history in the development of security studies by analyzing the causes and consequences of the war and its impact on society and nation and inculcate human values that results in the transformation of conflict

PSO4: Demonstrate critical thinking skills to analyse and evaluate the way in which National Security Strategists examine the real world scenario for the purposeful resolution.

- PSO5:** Classify various theories of international relations and their application in contemporary scenario
- PSO6:** Familiarize the student to read, write and speak with confidence on different aspects affecting national security and offer solutions
- PSO7:** Make the students socially responsible and adopt ethical standards or practice and develop the feeling of patriotism and nationalism
- PSO8:** Assess and evaluate the working process of the government on National Security affairs in terms of Policy Formulation/Policy Making
- PSO9:** Students with a M.A degree in Defence and Strategic Studies may be employed as research assistants with scholarships, Strategic Analyst, internships, Civil Services, Armed forces, Industrial Security Officers, Defence Journalist, Print Media, primary and secondary teachers with suitable teaching qualifications.

B.A DEFENCE AND STRATEGIC STUDIES COURSE OUTCOMES:

Course Title: Strategic Study of India

- CO1:** Outline the term Bharath and discuss the salient features of India's freedom struggle and explain India's geostrategic location in terms of its size, border, and topography.
- CO2:** Explain the physiographic features of the Himalayas, indo-Gangetic plains and discuss India's ethnic and linguistic composition.
- CO3:** Discuss the system of governance in India and explain the salient features of India's constitution. Analyse the role of governance recall the importance of national anthem and national institutions.
- CO4:** State and narrate the importance of India's resources with reference to nature, agriculture, and industry.
- CO5:** Describe and demonstrate the part played by defence research and the role and contribution of India's defence production. Highlight the significance of India's military potential

Course Title: Fundamentals of War and Peace

- CO1:** Define war and peace. Explain the nomenclature of the subject defence and strategic studies and outline the relevance and significance of the program defence and strategic studies.

- CO2:** Outline the basic concepts of war and strategy, tactics, campaign, battle, and defence and security. Classify wars and explain the categorization of war.
- CO3:** Discuss the causes of war and the principles of war.
- CO4:** Define peace and explain the various forms of peace. Analyse the role of peace education and peace movements. Explain the concept of peaceful coexistence and zone of peace.
- CO5:** Discuss the mechanics of war and peace. Evaluate the methods of settling international disputes and discuss the role of international law and international court of justice. Distinguish the concepts of peace making, Peace keeping and peace building.

Course Title: Political Science - An Introduction-I

- CO1:** Define political science and outline its nature and scope. Distinguish political science whether it is an art or science
- CO2:** Define state, describe the various elements of the state and explain the functions of the state. Distinguish between state and government, State and society.
- CO3:** Analyse and Asses the importance of various theories of origin of state
- CO4:** Analyse the importance of sovereignty and pluralism
- CO5:** Describe the role of the state and also explain the role of individuals with reference to fundamental rights, liberty, and duties.

Course Title: Art of Warfare In India upto 1947

- CO1:** Discuss the warfare in ancient India with reference to military system in Vedic, Puranic, and epic ages also clarify the wars in the ancient period and explain Mauriyan military system and appraise Kautilyas's philosophy of war and peace
- CO2:** Explain the warfare in the medieval India with reference to the Arabs Invasion on Indi, fand the foundation of the Mughal emperor in India.
- CO3:** Outline the military system of south India with reference to Cheras, Cholas, and Pandyas
- CO4:** Describe the revival of Hindu monarchy. Explain the military system of Maratha's under Shivaji, the rise of Sikhism and military system of maharaja Ranjit Singh.
- CO5:** Assess the entry of the Europeans to India and explain the British conquest of Bengal, the rise of presidencies and evaluate the consequences of the first war of independence.

Course Title: Independent India

- CO1:** Evaluate India's size, location, and physical environment.

- CO2:** Identify the different cultural patterns the quantum and quality of India's population. Also distinguish rural and urban India and apply the concept of unity in diversity.
- CO3:** Examine the basics of Indian economy with reference to its resources. Also summarize the life lines of Indian economy.
- CO4:** Discuss India's constitution its importance in terms of its features, fundamental rights and duties and the directive principles of state policy.

Course Title: World Military History

- CO1:** Describe and explain the military system in the ancient period with reference to Greco-Persian wars, their military organisations and rise of Alexander
- CO2:** Identify and explain the military system in ancient Rome. Their military organisation, the Carthaginian wars and the rise of Hannibal, Julius Caesar.
- CO3:** Discuss the military system during the medieval period and evaluate the importance of military reforms introduced by Gustavus Adolphus, analyse the causes and consequences of French revolution and evaluate Napoleon's art of war
- CO4:** Discuss, explain and evaluate world war I (with reference to causes course and Consequences)
- CO5:** Discuss, explain and evaluate world war II (with reference to causes course and Consequences)

Course Title: Political Science an Introduction-II

- CO1:** Outline the different forms of government and compare their relevant merits and demerits
- CO2:** Define democracy, identify the principles of democracy, explain its merits and de merits and summarize the conditions for the success of democracy
- CO3:** Describe the various organs of the government and explain and evaluate the role and functions of the legislative, the executive and the judiciary
- CO4:** Analyse and evaluate the role of public opinion, political parties and pressure groups
- CO5:** Explain and evaluate the electoral system in India in terms of adult franchise Representation of the minority, territorial and functional representation and outline the conditions of a good electoral process.

Course Title: Human Rights

- CO1:** Define, classify human rights and explain the principles of human rights.

CO2: Outline, explain and evaluate human rights abuses.

CO3: Describe universal declaration of human rights and state the importance of human rights norms and explain the importance of humanitarian laws

CO4: Describe the role of UNO in promoting human rights.

CO5: Assess and evaluate the part played by NHRC- National Human Rights Commission and SHRC- State Human Rights Commission. Explain the composition and functions of NHRC and SHRC.

Course Title: Fundamentals of National Security

CO1: Discuss the concept of nation, state, nation-state. Explain the origin, concept and objectives of national security.

CO2: Explain the spectrum of threats, security structure and the national security paradigm. Distinguish between different forms of threat and challenges.

CO2: Assess and evaluate the instruments of national security with reference to national power, military power and its components.

CO3: Discuss the mechanics of national security. Identify and explain different types of threat and explain threat perception, threat assessment, threat analysis and policy formulation..

CO5: Analyse, evaluate and assess the importance of national security concept in its totality and draw linkages with foreign and defence policies.

Course Title: International Relations

CO1: Explain the components of a state system

CO2: Define National power National Interest and Foreign policy and explain the role of state system and its corollaries.

CO3: Outline the various theories in International relation and assess and evaluate the significance of Idealism, Realism, Integration, Behaviouralism and Structuralism.

CO4: Define and explain the concept Diplomacy kinds of diplomacy, function of diplomacy and summarize the importance of Diplomacy in International Relation

CO5: Discuss the concept of collective security Explain the concept of Balance of Power the techniques, types of balance of power and the analyse the role of international law.

Course Title: Military Geography and Geo- Politics

- CO1:** Outline the basics fundamentals of military geography namely location, distance, climate, accessibility and visibility. Identify and explain the importance of geopolitics and military geography.
- CO2:** Assess, Evaluate and Summarize the important theories of military geography and geopolitics with special reference to the theories of Mackinder, Haushofar and A.T. Mahon.
- CO3:** Define the basics of the Global positioning system (GPS), the Global Information System(GIS) and Remote Sensing and also discuss the importance of all three in the present era.
- CO4:** Analyse and explain the geo-strategic significance of India in terms of its location, natural resources, land mass – Assess and evaluate the importance of Andaman, Nicobar and Lakshadweep Islands.
- CO5:** Identify and maritime India's borders. Discuss the nature and characteristics of land borders maritime boundaries, Territorial, waters and Exclusive Economic Zone.

Course Title: International Organisations

- CO1:** Discuss the evolution of International and Regional Organisation. Explain the characteristics of International and regional organisations. Distinguish between International Organisation (IO) & Regional Organisation (RO) and outline the importance of both the organisations.
- CO2:** Discuss the principles, powers, structure role, functions and achievements of the League of Nations and UNO.
- CO3:** Explain the salient features, aim role, functions, achievements and importance of SAARC, ASEAN and ARF.
- CO4:** Discuss the salient features of the European Union, Organisation for security and cooperation in Europe (OSCE).
- CO5:** Explain the aim, objectives, structure, role, functions and achievements of organisation of African Unity (OAU) Commonwealth of Independent States (CIS), Organisation of Islamic Conference (OIC), OAS, BRICS, Asia – Pacific Economic Forum (APEC)

Course Title: Specialized Warfare

- CO1:** Define psychological warfare. Explain the different types and techniques of psychological warfare. Summarize the effects of psychological warfare.

- CO2:** Explain the concept and characteristics of chemical and biological warfare. Discuss the effects of chemical and biological agents. Distinguish between Chemical Warfare and Biological warfare.
- CO3:** Discuss the concept of Guerilla warfare, its characteristics. Distinguish between Guerilla warfare, Insurgency and terrorism.
- CO4:** Explain the concept and origin of Nuclear warfare, the development of nuclear weapons and the impact of nuclear explosion.
- CO5:** Define Terrorism and Outline the causes of terrorism and explain the types and form of terrorism.

Course Title: Basics of Defence Economics

- CO1:** Explain the fundamental concepts, relating the Economics and defence Economics. Explain the prevailing dichotomy between Defence Vs Development.
- CO2:** Discuss various kinds of economic systems in operation. Explain the concept of public finance, Public Expenditure and the process of formulating Budget and Defence Budget.
- CO3:** To compare and analyse the Defence expenditure, Defence Budget with Pakistan & China.
- CO4:** To examine the process of Defence planning exercise in India and evaluate and assess the Defence needs in terms of weapons and Technological requirements.
- CO5:** To evaluate the role and contribution of OFs, DPSUs and private sector in Defence production & RD. To explain and analyse the effects of war on National Economy – like inflation, BOP, Depletion resources and accelerated development of Science & Technology

Course Title: Higher Defence Organisation of India

- CO1:** Outline the organizational pattern of higher defence organisation, its role and functions. Explain the role and functions of President of India with reference to Armed forces, Ministries and Defence and various committees.
- CO2:** Discuss the Field and Static organisation of Indian Army, Air force and Navy, Role and formation of paramilitary forces.
- CO3:** Explain, assess and evaluate the organizational role and functions of various Indian Intelligence Agencies.

CO4: Discuss and compare the higher defence organisation of USA, Russia, China and Pakistan with India.

CO5: Explain the process of recruitments and selection methods, techniques in the Armed Forces, and paramilitary forces.

Course Title: An Introduction to Defence Journalism

CO1: Define Journalism. Discuss the meaning relevance and scope of formation. Outline the structure and functioning of News organisation, media, kinds of Media and its characteristics.

CO2: Explain the purpose and meaning of defence News, Kinds and Source of News, Various threats of news selections.

CO3: Describe the significance of Defence stories and explain the format, language and grammar required. Explain the kinds of reporting, importance of eye witness, the use of graphics and animation and to state the importance of interviewing skills.

CO4: Explain the importance of editing. Define military terms, proof reading, caption writing and picture editing.

CO5: Identify and outline the hurdles in defence writing, discuss the importance of media ethics, media laws and explain the importance of visual media

Course Title: International Law

CO1: Define International law and municipal law; distinguish between International law and municipal law. Trace the history and development of International law. Explain the nature, source and codification of International law.

CO2: Discuss the laws of land, warfare, sea warfare and air warfare and explain the laws of maritime warfare, war crimes and genocides.

CO3: Discuss the laws of Neutrality with reference to right of Angary, Contra band and doctrine of continuous voyage.

CO4: Outline the importance of international law and explain war and its effects, its legal character and the settlement of disputes.

CO5: Assess and evaluate the importance of blockade, prize courts. Explain the organisation, role and function of International court of Justice.

Course Title: Wars in Independent India

- CO1:** Discuss the challenges of the partition of the British Indian Army.
- CO2:** Discuss the causes, the course, consequences and specific military lessons learnt during India – Pakistan war of 1947 – 48
- CO3:** Explain the causes of Sino – Indian war of 1962, the important operation of war and the major military lessons learnt.
- CO4:** Outline the major causes of India Pakistan war of 1965, role of artillery. Discuss the origin, causes course and consequences of India – Pakistan war of 1971.
- CO5:** Outline the major internal security operations with reference to operation blue star, Operation Rhino and Operation Vijay.

Course Title: Disarmament and Arms Control

- CO1:** Outline the evolution of the Nuclear era since 1945. Define the basics of Nuclear Technology, Nuclear Energy and its Uses and abuses.
- CO2:** Explain the development of missiles, its classifications, characteristics and the evolution of Nuclear Theories.
- CO3:** Explain the salient features of different Treaties like PTBT, TTBT, PNET, CTBT, ABM, SALT – I, SALT – II, INF, START, NPT, FMCT, MTCR, NSG and its impact.
- CO4:** Describe the significance of Chemical and Biological weapon conventions.
- CO5:** Assess, evaluate and explain India’s contribution towards disarmament and arms control.

Course Title: Limited Wars

- CO1:** Discuss the concept, meaning, definition and scope of limited wars. Explain the causes, course and consequences of the Korean War.
- CO2:** Explain the causes, the main events and the important lessons learnt during the Vietnam War.
- CO3:** Explain the causes, the course and the lessons learnt during the Arab – Israeli Wars.
- CO4:** Assess and evaluate the significance of Iran – Iraq war. Explain the causes, the major highlights, results and the impact of the war.
- CO5:** Assess and evaluate the causes, course and the consequences of Gulf war I &II. Examine the role of UNO.

Course Title: Defence Management

- CO1:** Define management. Distinguish between management and administration. Explain the principles and process of Management.
- CO2:** Outline the importance of the salient features and steps involved in planning, the concept of MBO and the decision making process and techniques.
- CO3:** Discuss the definition, meaning, structure, functions, types characteristics and principle of organisations
- CO4:** Explain the importance of staffing. Discuss the sources of man power supply and the process of requirement and selection in the Armed forces and paramilitary forces.
- CO5:** Explain directing and controlling. Explain the importance of military leadership. Distinguish between motivation and morale and explain the control techniques

3. B.A ECONOMICS

PROGRAMME SPECIFIC OUTCOMES:

PSO1: Demonstrate the behaviour of Indian and World economy,

PSO2: Analyse macroeconomic policies including fiscal and monetary policies of India

PSO3: Determine economic variables including inflation, unemployment, poverty, GDP, Balance of Payments using statistical methods

PSO4: Demonstrate the behaviour of financial and money markets and perform cost-benefit analysis for making investment decisions.

B.A ECONOMICS COURSE OUTCOMES:

Course Title: Micro Economics-I

CO1: To Demonstrate scope and significance of micro economics and its methodology.

CO2: To Distinguish Cardinal and Ordinal utility analysis.

CO3: To measure and analyse different types elasticity of demand.

CO4: Examine different theories of production function with economies of scale.

CO5: Demonstrate different cost and revenue curves with Break-Even analysis.

Course Title: Statistical Methods-I

CO1: To demonstrate the importance of statistics in economics.

CO2: To analyse different methods of data collection.

CO3: To measure and examine mean, medium and mode.

CO4: To apply measures of dispersion Gini Co-efficient and Lorenz curve

CO5: To differentiate dispersion , skewness and Kurtosis

Course Title: Industrial Economics (Allied)

CO1: To demonstrate the meaning and importance of industrial economics and its concepts

CO2: To analyse the location of Small, Medium and Large scale industries.

CO3: To distinguish industrial production and productivity and analyse the functions of national productivity council

CO4: To demonstrate Short-Term, Medium and Long-Term industrial financing institutions.

CO5: To analyse the role of industrial sector in Indian Economic Development.

Course Title: Basics of Capital Market (NME)

CO1: To Demonstrate the functions and growth of capital markets in India.

CO2: To examine the role and significance of Long-Term financial institutions.

CO3: To demonstrate different types of shares, debentures and bonds and their importance.

CO4: Distinguish primary and secondary market.

CO5: To analyse the role and functions of SEBI

Course Title: Micro Economics-II

CO1: To analyse the Short-run equilibrium conditions of perfect competition.

CO2: To demonstrate and analyse different types of monopoly and its equilibrium.

CO3: To distinguish equilibrium conditions of monopolistic and oligopoly market structures.

CO4: To demonstrate different theories of factor pricing and distinguish classical, Keynesian and modern theories factor pricing.

CO5: To demonstrate the concepts of welfare economics and analyse Pareto and Amartya Sen's views on welfare economics

Course Title: Statistical Methods-II

CO1: To demonstrate different types of correlation in economics.

CO2: To demonstrate different types of Regressions and its applicability in economics.

CO3: To distinguish different kinds of Index numbers and construct cost of living index numbers.

CO4: To analyse different components of time series analysis.

CO5: To apply the theory of probability in economics.

Course Title: Entrepreneurial Development (Allied)

CO1: To demonstrate the role and types of entrepreneurs in economic development.

CO2: To analyse different theories of entrepreneurship.

CO3: To demonstrate the evolution of Indian entrepreneurship and economic development.

CO4: To analyse the role of MSME in industrial and entrepreneurship development.

CO5: To prepare a project proposal to start any project.

Course Title: Indian Economy for Civil Service Examinations (NME)

CO1: To demonstrate and analyse the concepts in economic development and economic policies.

CO2: To analyse the population policy in India and its growth.

CO3: To measure poverty line and examine the poverty alleviation programmes in India.

CO4: To analyse the causes, consequence and remedial measures to control inflation in India.

CO5: To apply monetary and fiscal policies to maintain stability in an economy.

Course Title: Macro Economics-I

CO1: Demonstrate the nature and significance of macroeconomics and distinguish micro and macro economics

CO2: Examine different methods of measuring national income

CO3: Differentiate classical and Keynesian theory of employment

CO4: Demonstrate the different theories of consumption functions

CO5: Analyze different theories of investment function

Course Title: Money and Banking –I

CO1: Demonstrate the evolution and functions of the money

CO2: Analyze the growth of circular flow of money

CO3: Evaluate the basic theories of money

CO4: Critically analyze different theories of demand and supply of money

CO5: Differentiate the Keynesian and Post Keynesian theories of money and its effect on price, production and distribution

Course Title: Basic Mathematics for Economists

CO1: Demonstrate the different concepts and tools in mathematical economics

CO2: Apply linear and non-linear functions in Demand and supply functions

CO3: Demonstrate the vector and matrix's notations with economic concepts

CO4: Demonstrate the basics of differential calculus in production function analysis

CO5: Differentiate Definite and Indefinite integrals

Course Title: Environmental Studies

CO1: Demonstrate the significance of environmental economics

CO2: Analyze the existing renewable and non-renewable resources

CO3: Differentiate conventional and non-conventional energy resources

CO4: Analyze different pollution control measures

CO5: Demonstrate different international environmental policies

Course Title: Macro Economics-II

CO1: Demonstrate and analyze the concept of multiplier and accelerator

CO2: Critically analyze Keynesian theory of output and employment

CO3: Evaluate Post-Keynesian theories of demand for money

CO4: Demonstrate different types of unemployment and causes of it

CO5: To distinguish Keynesian and Classical theory of aggregate demand and aggregate supply

Course Title: Money and Banking –II

CO1: To demonstrate the evolution and different branches of banking

CO2: To analyse the functions of commercial banks and their role in economic development

CO3: To analyse the functions of RBI and its role in economic development

CO4: To demonstrate different objectives and instruments of monetary policy

CO5: To Distinguish role of IMF and World Bank in economic development

Course Title: Basic Econometric Methods

- CO1:** To Demonstrate the meaning and scope of econometrics
- CO2:** To apply different types of correlation techniques in economics
- CO3:** To apply and analyse the regression model
- CO4:** To apply econometric models in forecasting the economic variables
- CO5:** To demonstrate the usage of SPSS, STATA etc

Course Title: Indian Economic Development-I

- CO1:** Demonstrate the characteristic features of Indian economy
- CO2:** Analyze the growth of population and Indian economic development
- CO3:** Evaluate the role of agriculture and rural development in Indian Economy
- CO4:** Critically analyses the different industrial policies in Industrial development of India
- CO5:** Analyze the contribution of service sector in Indian economic development

Course Title: Fiscal Economics –I

- CO1:** Demonstrate different Theories of public finance
- CO2:** Analyse different theories of public expenditure and its growth
- CO3:** Examine different types of taxes and incidence of taxation.
- CO4:** Critically analyse direct taxes in India
- CO5:** Demonstrate and analyse the taxable capacity in India

Course Title: International Economics –I

- CO1:** Analyze the different theories of international trade
- CO2:** Demonstrate different concepts of terms of trade and analyze the static and dynamic nature of it
- CO3:** Evaluate different trade policies
- CO4:** Demonstrate and evaluate Tariff and Quotas
- CO5:** Critically analyze BOP and BOT

Course Title: Development of Economic Doctrines

- CO1:** To demonstrate origin and development of economic ideas
- CO2:** To analyse karl Marxian theory and apply in the real world

CO3: Critically analyse Marginal school of economic ideas

CO4: Differentiate micro and macro foundations

CO5: Demonstrate the applicability of welfare economics

Course Title: Economic of Population Studies (Elective)

CO1: To demonstrate the basic concepts in economics

CO2: To analyze the structure of labor and concepts

CO3: To critically analyze the status of labor and employment in India

CO4: To evaluate the implication of population growth

CO5: To analyze the population growth and economic development.

Course Title: Indian Economic Development –II

CO1: Demonstrate the concepts of growth and development indicators

CO2: Analyze different economic growth theories from classical to balanced and unbalanced growth theory

CO3: Examine the role of public sector in Indian Economic development

CO4: Analyze outcomes of different five year plans

CO5: Critically analyze the different growth models from Harrods Domar to Mahalanobis model

Course Title: Fiscal Economics –II

CO1: Demonstrate the role of public debt in economic development

CO2: Analyze different budget techniques and deficit financing in India

CO3: Demonstrate the principles of federal finance and functions of the Finance Commission

CO4: Critically analyze the role of fiscal policy in Indian economic development

CO5: Demonstrate and analyze the functions of local bodies and the problems of its.

Course Title: International Economics-II

CO1: Demonstrate the determination of different types of exchange rate

CO2: Analyse different theories of exchange rate

CO3: Analyse the role of FDI in economic development

CO4: Demonstrate the role of IMF in World Trade Development

CO5: Demonstrate the functions of World Bank, GATT, WTO

Course Title: Marketing (Elective)

- CO1:** To demonstrate evolution of marketing
- CO2:** To Differentiate different types of marketing
- CO3:** To Analyse the facilitating function of marketing
- CO4:** To Critically analyse different channels of distribution
- CO5:** To Differentiate regulated and unregulated markets

Course Title: Urban Economics (Elective)

- CO1:** To analyze the growth of urban areas and the system.
- CO2:** To evaluate the size of city and the location
- CO3:** To critically analyze the urban planning and infrastructure up gradation
- CO4:** To evaluate the urban environment planning in critical sectors.
- CO5:** To critically analyze the role of local finances in the urban infrastructure.

4. B.B.A

PROGRAMME SPECIFICE OUTCOMES:

- PSO1:** Would gain a thorough grounding in the fundamentals of business management.
- PSO2:** The industry and entrepreneurship oriented curriculum offers a number of specializations and practical exposures
- PSO3:** The holistic outlook of the program with a number of value based and personality development courses ensures that students are groomed into up-to-date, assertive and effective business executives with strong leadership skills and social consciousness.
- PSO4:** An ability to apply knowledge, skills and right attitude necessary to provide effective leadership in a global environment and also would equip to face the contemporary challenges in the field of Business.
- PSO5:** An ability to develop competent management professionals with strong ethical values, capable of assuming a pivotal role in various sectors of the Indian Economy & Society, aligned with the national priorities
- PSO6:** An ability to develop proactive thinking so as to perform effectively in the dynamic socio-economic and business ecosystem

B.B.A COURSE OUTCOMES:

Course Title: Financial Accounting

- CO1:** To formulate of the basic concepts of Accounting
- CO2:** To demonstrate Sole trading Concern and Balance Sheet
- CO3:** To identify the main financial statements and their purposes.
- CO4:** To explain about depreciation and loss of Stock
- CO5:** To prepare about Single entry and double entry system

Course Title: Principles of Management

- CO1:** To evaluate the importance and levels of Management
- CO2:** To Demonstrate the planning procedure and decision process.
- CO3:** To explain the types of organization, power and Authority
- CO4:** To demonstrate about recruitment , selection and control process
- CO5:** To analyse about business ethics and moral responsibility

Course Title: Business communication

- CO1:** To Communicate the basic principles of effective Communication.
- CO2:** To Create use of business letters.
- CO3:** To Compile the business Correspondence letters
- CO4:** To Analyse about Agenda, minutes, circular and notes
- CO5:** To outline about modern forms of communication

Course Title: Analytical and Logical Reasoning

- CO1:** To Identify and analyse the elements of arguments. [Inquiry, Critical Thinking]
- CO2:** To Effectively communicate the substance and meaning of mathematical problems and solutions. [Critical Thinking, Thoughtful Expression]
- CO3:** To Analyse arguments based on mathematical reasoning and/or careful analysis of data.
- CO4:** To Create, solve and interpret basic mathematical models. [Foundational Knowledge, Inquiry, Information Literacy, Critical Thinking]

Course Title: Business and corporate law

- CO1:** To Identify the principles behind law of contract

CO2: To Get equipped to identify the validity different types special contracts

CO3: To explain the use of sale of goods act

CO4: To outline the general awareness about the principles behind, companies

CO5: To outline the general awareness about the partnership act

Course Title: Management Accounting

CO1: To Explain the three primary purposes of management accounting namely, inventory valuation, decision support and cost control

CO2: To Compare traditional and contemporary costing approaches for the above purposes.

CO3: To know how costs are analysed for different product costing contexts such as job-order, process or joint-product systems

CO4: Develop and apply standards and budgets for planning and controlling purposes.

CO5: Apply incremental analysis to a range of business scenarios.

Course Title: Managerial Economics

CO1: To acquaint the students with the micro and macroeconomic bases of business decisions in a business organization

CO2: Apply the economic way of thinking to individual decisions and business decisions

CO3: To demonstrate economies of scale, diseconomies of scale, economies of scope, and cost complementarities, and how each affects the cost of production

CO4: To Derive the equilibrium conditions for cost minimization and profit maximization

CO5: To identify the different costs of production and how they affect short and long run decisions

Course Title: Basics of Insurance

CO1: To Explain nature and principles of Insurance

CO2: To discuss the features of Life Insurance

CO3: To demonstrate the features of General Insurance

CO4: To Explain the regulatory framework of Insurance in India

Course Title: Marketing Management

CO1: To demonstrate about Marketing Approaches and marketing mix

CO2: To plan for Segmentation, targeting and Positioning.

CO3: To discuss the PLC, NPD, Packaging & Labelling

CO4: To apply about advertisement, publicity & public relations

CO5: To assess knowledge about Channels of Distribution

Course Title: Financial Management

CO1: To identify the financial sources and the role of managing it.

CO2: To analyse the use of Capital structure & equity proportion.

CO3: To compute the concept of cost of Capital

CO4: To evaluate calculations of dividend policies

CO5: To formulate the methods of Working Capital

Course Title: E- Business

CO1: To identify the Opportunities and goals of E- Business

CO2: To design the Network infrastructure for E- Business

CO3: To compute the concept of Internet Payment System

CO4: To predict strategies about B2B models

CO5: To utilize the technology of WAP and Networking Standards

Course Title: Entrepreneurial Development

CO1: To demonstrate of basic concepts of Entrepreneurship.

CO2: To identify the Entrepreneurial Development Agencies

CO3: To outline the concept of Project Management

CO4: To plan about conducting EDP

CO5: To explain about Economic Development & Entrepreneurial growth

Course Title: Personality Enrichment

CO1: Design and complete a research project that can take the form of a development in personality

CO2: To demonstrate the issues in human development..

CO3: The students will have the opportunity to explore current management literature so as to develop an individual style and sharpen his skills in the area of leadership, communication, decision making, motivation and conflict management

Course Title: International Economics

- CO1:** To acquaint the students with the micro and macroeconomic bases of business decisions in a business organization
- CO2:** To Explain Models Of Supply And Demand Within The Context Of International Trade Theory Analysis
- CO3:** To Establishe the relationship between foreign trade theory and economic development.
- CO4:** To analyse the concept of exchange markets, and exchange rate systems
- CO5:** To Explain liberalization of world trade, and international trade.

Course Title: Management Information System

- CO1:** To Demonstrate the basic concepts and technologies used in the field of management information systems
- CO2:** To Compare the processes of developing and implementing information systems.
- CO3:** To Outline the role of the ethical, social, and security issues of information systems
- CO4:** To Outline the role of information systems in organizations, the strategic management processes, with the implications for the management.
- CO5:** To Apply the understanding of how various information systems like DBMS work together to accomplish the information objectives of an organization.

Course Title: Financial Services

- CO1:** To Explain Financial Services management as an important and contemporary area of financial management
- CO2:** To Outline the various financial services and their future
- CO3:** To Discuss the most suitable financial service Factoring
- CO4:** To Discuss with the students get familiarized with Mutual Funds
- CO5:** To Compile about the credit rating and its regulatory

Course Title: Business Taxation

- CO1:** To outline the Taxation concepts and articles of it
- CO2:** To assess the importance of taxation policies
- CO3:** To identify the taxable and non-taxable entities.

CO4: To analyze the Taxation Forms and Reports.

CO5: To communicate the basic concepts of GST

Course Title: Environmental Studies

CO1: To interact with the environment on both a personal and a social level

CO2: To outline the human interactions with the environment.

CO3: To demonstrate how natural systems and human-designed systems work together, as well as in conflict with each other.

Course Title: Business Environment

CO1: To demonstrate the multidisciplinary nature of environmental studies

CO2: To assess the link of political environment with business

CO3: To explain the concepts of socio cultural environment

CO4: To demonstrate the concepts of legal and technological environment

CO5: To outline the financial information is utilized in business

Course Title: Organisational Behaviour

CO1: To Manage conflict amongst groups in business environment

CO2: To apply motivational theories in the workplace

CO3: To Identify changes within organizations and power and politics in organizations

CO4: To Evaluate the developments of basic conflict resolutions

CO5: To Examine group types and team working techniques.

Course Title: Business Research

CO1: To outline the basic concepts of research process in business.

CO2: To evaluate research design and sampling techniques

CO3: To demonstrate the concept of questionnaire and graphical representation

CO4: To analyse about hypothesis testing and test of significance

CO5: To compile about research report

Course Title: Advertising management and Sales Promotion

CO1: To demonstrate basic concepts of Advertising & copy development.

CO2: To outline about Mass Media & budget planning

CO3: To explain the concept of advertising agencies

CO4: To assess the use about sales promotion

CO5: To evaluate about advertisement effectiveness

Course Title: Operations Management

CO1: To outline the basic concepts of Production management.

CO2: To plan for production planning and control

CO3: To explain the concept of plant location & layout

CO4: To analyse about work and method study

CO5: To compile about quality control & types of inspection

Course Title: Human resource management

CO1: To demonstrate the concept, principles and practices of H.R.M

CO2: To discuss HR Planning

CO3: To demonstrate Recruitment and Selection Process through Practice work

CO4: To identify the cases with applicability of training and development, personnel record reports and audit

CO5: To assess necessary skill set for application of various HR issues.

Course Title: Services Marketing

CO1: To outline the theoretical and practical basis for service

CO2: To Explain the significance of services marketing in the global economy and the deeper aspects of successful services marketing

CO3: To explain the nature and scope of services marketing and present about this in a professional and engaging manner

CO4: To evaluate the expectations of customers and know how to translate this knowledge into genuine value for customers

CO5: To identify the current research trends in services marketing and management

Course Title: Customer Relationship Management

CO1: To identify the benefits of value creation for the customers. Gained an understanding of key concepts, technologies and best practices of CRM

CO2: To explain the customer equity and the importance of customer retention to the organization

CO3: To analyse the different processes and design the strategic framework for CRM integration in the existing functions of the organizations.

CO4: To plan CRM as a business strategy

CO5: To analyse the role of appropriate business process and technology management capabilities in managing customer relationships.

Course Title: Importance of Emotional Intelligence

CO1: To evoke knowledge amongst students on Emotional Intelligence

CO2: To make students understand the importance of self-awareness and self-development

Course Title: Managerial Skill Development

CO1: To enhance the public speaking skills

CO2: To apply the skills in excelling in the competitive examinations.

6. B.COM BANK MANAGEMENT

PROGRAMME SPECIFIC OUTCOMES:

PSO1: Banking system plays a very significant role in the economy of a country. The phenomenal growth of the banking and finance industry, lucrative career prospects in this field and their increasing contribution to the development of Indian economy has brought out the need for the establishment of B.Com (Bank Management) as a separate department by the University of Madras. This course as per the demands of the student community was started in the academic year 2015-16 in our college in Shift II.

PSO2: This course familiarises the students with the subjects related to commerce such as financial and corporate accounting, cost and management accounting, corporate laws and financial services with an intense emphasis on banking technology and its regulatory mechanism, banking communication, international banking, global awareness in banking systems and banking law. This course also focusses on imparting the much needed skills like communication skills, presentation skills, technical skills, etc., through specially designed skill development programmes.

PSO3: This programme is designed to develop knowledge on the Accounting, financial aspects of management, and knowledge on banking, auditing and tax along with analytical, communication, managerial and statistical aspects in current environment.

PSO4: At the under graduate level one of the best programme provides the student a specific knowledge on banking sectors as well as understanding on a variety of disciplines in commerce and management.

PSO5: The programme is designed in such a fashion to provide ample scope for practical exposure to the problems and opportunities for students who can choose not only banking sectors but also accounting sectors, management as well as entrepreneurship.

B.COM BANK MANAGEMENT COURSE OUTCOMES:

Course Title: Financial Accounting

CO1: Able to demonstrate the various basic accounting concepts and formulate the accounting Transactions such as Journal, Ledger, Preparation of Trial Balance

CO2: Preparation of various types of cash book and compute final accounts with adjustments

CO3: Compute and evaluate journal, ledger, trial balance and final accounts

CO4: Outline the various depreciation concepts and compute the same. Explain the concept of insurance and create average clause.

CO5: Analyse and compute errors on accounting and able to prepare suspense accounts. Compute and solve single and double entry system of accounting.

Course Title: Principles of Management

CO1: Identify and apply the various levels of management, importance and application of management in functional areas like production, accounting and finance, marketing and personnel management .Demonstrate about various theories of management and their approaches to management and administrative system.

CO2: Explain about the various functions of management such as planning, organizing, directing, and controlling and their nature, types, functions, structure and importance for the managerial activities.

CO3: Able to Communicate the importance of planning and decision making and apply the same in managerial functions based on the process, types and functions.

CO4: Outline the meaning and importance of staffing, recruitment and directing in an organisation. Demonstrate about various leadership styles like Authoritative, participative and delegation.

CO5: Demonstrate about need, functions, types and process of coordination and control which are very essential for modern management and administrative system. values and social responsibilities of business

Course Title: Monetary Economics

CO1: Compile the role of money in all the three economics.

CO2: Analyse the value and utilization of money in market.

CO3: Utilize the existing factors impacting the money supply and write a plan to overcome it.

CO4: Outline in the significance stages of business cycle.

CO5: Design a plan to inculcate the positive traits of emotions in our day to day life

Course Title: Corporate Communication

CO1: Discuss about the various concepts of communication, principles, need and process. Outline the barriers to communication and essential ways to overcome the barriers. Explain about the various types of communication and their merits and demerits.

CO2: Outline the various channels of communication and their role with advantages and disadvantages in an organisation.

CO3: Explain the principles of effective letter writing and demonstrate the various business letters and layouts like parts, structure, full block, modified block and semi block.

CO4: Compose the essential letters pertain to personnel such as Job application, Resume letter acceptance, inter office memo and letter of resignation. Design the various business correspondence essential organisational functions such as Trade letters, order, credit and status enquiry, complaints, sales and promotional letter and memo.

CO5: Design the various report writings with respect to organisation like Agend, Minutes of Meeting, Memorandum, office order and circular

Course Title: Banking Law and Practice

CO1: Discuss the significance of Banking Regulation Act, 1949 and role of RBI

CO2: Analyse the concepts involving in banker and customer relationship.

- CO3:** Compile the role of negotiable instruments such as promissory notes ,Bills of exchange, cheques, etc
- CO4:** Explain the different forms of E-Banking operations along with the benefits over normal banking operations
- CO5:** Analyse various forms of customer grievance redressal mechanism

Course Title: Theory of Money and banking

- CO1:** Demonstrate about the kinds of money its functions and significance in economy.Explain the evaluation of money from Barter system to paper money which communicate about the importance of money being medium of exchange.
- CO2:** Outline the evolution of banking system and differentiate the functions and structure between central and Commercial bank. Comprehend and explain about credit creation in banking, policies of banking, clearing houses and balance sheet of bank.
- CO3:** Compile the functionaries of exchange and discuss about exchange market and rate of exchange. Able to demonstrate about the exchange control.
- CO4:** Analyse the significance of various banking sectors in India. Students will be able to assess the differences of banking sectors and their significance for economic growth.
- CO5:** Able to explain about various Indian banking sectors like NABARD,SBI,Exchange banks, commercial banks, indigenous banks and cooperative banks and differentiate them based on functions and role.

Course Title: Business and corporate laws

- CO1:** Compile the essential elements of a valid contract along with its classifications.
- CO2:** Analyse the pros and cons in Discharge of Contract with respect to valid pledge, Rights and Duties.
- CO3:** Utilise the existing legal rules and principles to formulate valid agency, termination of agency.
- CO4:** Outline the characteristics of kinds of companies and its significance in formulating associations.
- CO5:** Explain the concept of debentures and its implications.

Course Title: Corporate Accounting

- CO1:** To explain the Issue and Underwriting of shares, and complete, partial, firm underwriting
- CO2:** To demonstrate the Redemption of preference shares at par, premium and to assess the profits prior to incorporation.
- CO3:** Outline on Preparation of final accounts of joint stock company
- CO4:** To assess the Valuation of good will and shares
- CO5:** To evaluate the alteration of share capital and internal reconstruction

Course Title: International Economics

- CO1:** Explain about International economics and international trade, its scope and Importance for economic development. Demonstrate the various theories and growth pertains to international trade.
- CO2:** Outline the concept of Balance of trade and balance of payments and evaluate the causes of disequilibrium caused and methods to correct the same. Discuss about the various exchange rates such as fixed and floating and concepts like euro and dollar marketing.
- CO3:** Discuss on Export Management its procedures and various documentations. Pertaining to export procedure, promotion, pricing and finance.
- CO4:** Demonstrate about various International Economic Organizations such as IMF,IDA,IFA,IBRD,ADB,UNCTAD,UNIDO and its Functions
- CO5:** Communicate about WTO and various Trade Liberalization esp. for manufacturing and agricultural in india.Disucss on Indian patent laws and intellectual property rights such as TRIPS and TRIMS

Course Title: Financial services

- CO1:** To analyse the importance of Financial Services and economic environment
- CO2:** To predict the players in financial service sector and to assess the types of markets and issue management
- CO3:** Explain the types of leasing and various outline of factoring, hire purchase
- CO4:** Plan and discuss about the features and functions ,modes of VC,CRISIL,ICRA&CARF
- CO5:** Analyse the various types of mutual funds

Course Title: Advance Corporate accounting

- CO1:** Gain knowledge on Amalgamation, absorption and external reconstruction.
- CO2:** Understanding on Consolidated statements of holding and subsidiary companies
- CO3:** Acquire knowledge on Final statements of banking and insurance companies
- CO4:** Impart knowledge on Liquidator's final statement of account and final statement of insurance companies.

Course Title: Management Accounting

- CO1:** Explain about management accounting and its difference with cost accounting and financial accounting.
- CO2:** Compute and analyse various financial statements using comparative, common size and trend analysis
- CO3:** Evaluate and analyse different ratios such as liquidity, profitability and turnover and demonstrate its use for management.
- CO4:** Analyse and compute funds flow statement, preparation of working capital statement and funds from operation.
- CO5:** Outline the meaning of cash flow statement and able to prepare statement as per AS – 3. Demonstrate and prepare various budget such as flexible, cash and production.

Course Title: Personal Investment Planning

- CO1:** Demonstrate about investment and its differences with speculation and gambling
- CO2:** Discuss about various non-marketable financial assets.
- CO3:** Outline the meaning of stock exchange and its functions with respect to SEBI. Discuss about stock brokers, speculation and their types.
- CO4:** Explain about the various investment schemes like PF, PPF and bank deposits
- CO5:** Analyse the various opportunities of investment and their importance for current scenario.

Course Title: Financial Management

- CO1:** Outline the meaning, objective and Functions of financial management which are essential to perform the role of financial manager in current scenario.
- CO2:** Compute and analyse the Capital structures such as Debt and Equity and determining the proportion and factors affecting the same. Able to demonstrate the various theories

pertaining to capital structure and explain the concept of leverage. demonstrate and analyse the weighted average cost of capital of the firm

CO3: Create and design the optimum capital structure with using the cost of appropriate proportion of equity, preference capital, and debt and retained earnings.

CO4: Analyse and compute various dividend payment methods such as Walter's and Gordon's model. Outline the factors affecting dividend payment and company law provision for the same.

CO5: Evaluate the Working Capital Management and compute the various components working capital operating cycle.

Course Title: Customer Relationship Management

CO1: Discuss the concept of customer relationship management.

CO2: Compare the different modes of communication channel along with the advantages.

CO3: Access the barriers prevailing in communication with respect its inter and intra personnel communication

CO4: Prepare a business letter-communicating its fill up the existing vacancies in an organisations

CO5: Explain the outcome of talwar and[701poria community]

Course Title: Practical Auditing

CO1: To explain about Audit types, audit planning and working papers

CO2: To analyse the Importance of vouching of cash receipts payments

CO3: Outline about Appointment of auditors and their removal

CO4: To assess the Rights duties and of an auditors

CO5: An outline about EDP audit and types of online computer systems

Course Title: Management of Human Resources

CO1: Discuss the significance of Human Resource Management along with the methods of selection process.

CO2: List out the training techniques and its effectiveness of traditional and modern methods.

CO3: Compare the differences between Abraham Maslow's theory, McGregor's 'X', 'Y', William Ouchi's Z theory, Herzberg's two factor theory, Vrooms valance expectancy theory, McClelland's need achievement theory .

CO4: Explain the outcome of functions of trade unions, and its types and effectiveness.

CO5: Discuss the Industrial Disputes and Settlements [laws excluded]

Course Title: Cost Accounting

CO1: To explain the concepts and classifications, installation of costing systems

CO2: To demonstrate about the cost sheets, reconciliation of cost and financial accounts

CO3: To explain the concepts on material purchase EOQ, ABC analysis, VED, and issue of materials -FIFO, LIFO,HIFO,SAM,WAM.

CO4: To design about the labour cost method of wages payments and payroll procedure

CO5: Analysis of overheads, classifications, allocations and absorptions

Course Title: Entrepreneurial Development

CO1: Discuss about the basic concept and functions of entrepreneurship, the various types and classification of entrepreneurs and factors that influence entrepreneurship.

CO2: Outline the various Entrepreneur development agencies and financial institutions prevailing in India and the schemes to develop entrepreneurship.

CO3: Create and demonstrate the complete Project management starts from Business idea generation, identification of opportunity, various feasibility study, project report submission and appraisal of projects.

CO4: Explain about the various Entrepreneurial development programmes, role and achievements by government on the same.

CO5: Communicate about the various role entrepreneurial growth with respect to Economic development

CO6: Discuss and use the importance of strategic approaches formulated for small scale industries, networking, and niche players and franchising. Identify the various opportunities available for women entrepreneur and utilize the same.

Course Title: Emotional Intelligence

CO1: Illustrate the concepts and competencies of emotional intelligence.

CO2: Describe the significance of psychological needs.

CO3: Discuss the negative traits of emotional along with the solutions.

CO4: Design a plan it's indicate the positive traits of emotions in our day its day life.

CO5: Apply the outcome of self-analysis with its benefits.

Course Title: Advance financial accounting

CO1: Explain the types of branches, branch accounts.

CO2: Compile the basis for allocation of expenses need for deposit account

CO3: Evaluate the hire purchase trading account, purchase system

CO4: To Compile the admission of partner, retirement

CO5: Outline the concepts of involving dissolution and insolvency of partnership act(1932)

Course Title: Business Taxation

CO1: Learn significance of Business Taxation in Historical and current scenario

CO2: Taxation concepts in the practical applications of Business Taxation

CO3: Learn the basic scenario with respect to classification of goods and its valuation under customs act.

CO4: Thorough knowledge on the Business Taxation's important topics

CO5: Concepts on Import and exports, GST, and learn the aspects of it

Course Title: Credit and Risk management in banking

CO1: Outline of Bank credit, – types of securities & legal documents, RBI directives & Various committee

CO2: Explain the access of lending to Different Customers

CO3: Demonstrating the Loan Processing – Sanctioning – Monitoring – Recovering Commercial Loans

CO4: To Assess the balance sheet, profit loss, cash flow and fund flow and project approach

CO5: To plan & evaluate the remedial measure, debt recovery tribunals, management NPA

Course Title: Income Tax Law and practice (1)

CO1: Analyse the features of income tax act and its significance

CO2: Compare the unique features of terms such as Heads of Income, Salaries, Allowance.

CO3: Discuss the concept of the house property annual value and the computation of income.

CO4: Compare the different types of barriers in business or profession, allowable and non-allowable expenses.

CO5: Explain the signification of Income tax authorities such as CBDT, PAN, etc.

Course Title: Income Tax Law and practice (2)

CO1: Compile the significance of different terms such as income under capital gains and indexation of cost under various circumstances.

CO2: Describe about the income from the source along with reduction in computing the income

CO3: Apply the in clubbing of income and the implication in set of losses.

CO4: Illustrate about the permissible deduction from gross total income SEC 80C, 80CCC,80CCCD

CO5: Discuss the assessment of individuals in computation of tax liability

7. B.COM GENERAL

PROGRAMME SPECIFIC OUTCOMES:

PSO1: Accomplish their goals towards the need for current business scenario with their equipped contents in the financial affairs of the business.

PSO2: Manage the purity of business transactions with ethics through the gained knowledge in the field of Accounting and Auditing.

PSO3: Position themselves in determining and managing Costs, Revenue, Pricing and budgetary techniques through effective management accounting expertise

PSO4: Proficient in handling tax filing systems, GST and other Legal Procedures required for business environment.

PSO5: Empower to locate themselves in the competitive business scenario with the acquired communication skills, Marketing skills and Professional Development skills.

PSO6: Make pro-active decisions pertaining to business solutions with regard to application of economic principles and techniques at micro and macro level.

PSO7: Initiate and sustain entrepreneurship as a career by the well-built competencies acquired.

PSO8: Enrich their minds with human resources managerial skills, aptitude skills, interview skills and over all personality skills to face the challenges in the corporate world.

B.COM GENERAL COURSE OUTCOMES:

Course Title: Financial Accounting –I

CO1: Recalls the basic concepts, conventions and accounting process.

- CO2:** Enables the students to prepare financial statements in accordance with appropriate standards.
- CO3:** Determines the useful value of the life of Assets in the business
- CO4:** Familiarizes the students in managing their business loss through insurance claims
- CO5:** Distinguishes the two system of accounting and enables to summarize the necessary statements.
- CO6:** Outlines the overall functions of Financial Accounting in business.

Course Title: Business Communication

- CO1:** Describes the dimensions, methods and the barriers to communication
- CO2:** Outlines the preparation of various official communications
- CO3:** Elaborates the several essential business correspondences
- CO4:** Details the process of communication with community towards banking and insurance
- CO5:** Enables the students to outlay the different required reports needed for business
- CO6:** Acquaint with knowledge on all business correspondences

Course Title: Economics for Business Decision

- CO1:** Introduces the basic concepts of business economics.
- CO2:** Illustrates the Demand and Supply approach of economics for decision making
- CO3:** Examines the consumer behavior theories
- CO4:** Familiarize with Production theories for business application
- CO5:** Discusses the pricing strategies and techniques
- CO6:** Equips the students with the economic principles in order to apply into business.

Course Title: Financial Accounting –II

- CO1:** Introduces the procedure of preparing accounts for hire purchase system
- CO2:** Illustrates the types of branches and its accounting procedures
- CO3:** To handle and maintain accounting statements for various departments.
- CO4:** Elaborates the system of partnership firms towards admission, retirement and death of partners
- CO5:** Enables the students to calculate distribution of assets in case of dissolution .
- CO6:** Familiarize with various accounting procedures of different forms of organizations.

Course Title: Principles of Management

- CO1: Introduces the Management Thoughts
- CO2: Enables the students to plan and decision making in business solutions
- CO3: Demonstrate the structure of organization and management of subordinates
- CO4: Examine the procedures of recruitment and explains the power and Authority
- CO5: Enriches the students in coordinating business with effective control.
- CO6: Enables the students to effectively manage a business.

Course Title: Indian Economic Development

- CO1: Develop ideas of basic characteristics of Indian Economy and its potentials
- CO2: Acquiring knowledge about computation of National Income
- CO3: Examines the causes and impact of major problems of Indian Economy
- CO4: Justify agriculture as the foundation of economic growth
- CO5: Discuss the changing nature of industrial sector and its contribution
- CO6: Predict the Indian economic development through Planning undertaken by Govt. of India

Course Title: Corporate Accounting –I

- CO1: Familiarize the students with issue of shares and underwriting
- CO2: Demonstrate the preparation of liquidator final statement of accounts
- CO3: Construct the computation of Goodwill and shares
- CO4: Assess the preparation of Final accounts of companies
- CO5: Acquaint the knowledge on social responsibility accounting and Human Resource Accounting
- CO6: Enable the students on the accounting treatment relating to company accounts

Course Title: Business Laws

- CO1: Describe the general terms relevant to business and contract
- CO2: Demonstrate an understanding of key elements while signing an agreement
- CO3: Illustrate the process of performance and remedies available to the aggrieved party in case of default
- CO4: Develop the general understanding on contract of sale of Goods Act
- CO5: Outline the rights and duties of a person entrusted by various Laws of contract
- CO6: Explains the overview of Legal framework of business.

Course Title: Banking Theory Law and Practice

- CO1:** Outline the role of RBI and Indian Banking System
- CO2:** Compare and contrast the practices of Traditional and Modern Banking Services
- CO3:** Familiarize the students with adoption of e-banking
- CO4:** Demonstrate the customer relationship practices of banks
- CO5:** Illustrate and categorize the use of Banking instruments
- CO6:** Examine the realistic procedures of banking system.

Course Title: Marketing

- CO1:** Recalls the functions and importance of Marketing Management
- CO2:** Analyse the consumer buying behavior in Marketing environment
- CO3:** Examine the product mix and pricing strategies
- CO4:** Identify the channels of marketing communication
- CO5:** Familiarize with the latest trends on e- marketing
- CO6:** Enhance the marketing skills of students for effective business performance

Course Title: Business Statistics

- CO1:** Explains the methods of collection of data
- CO2:** Classify and represent the data into required tables and charts
- CO3:** Complete the analysis of measurement of central tendency
- CO4:** Examine the skewness of data symmetry
- CO5:** Estimation of future values through trend analysis
- CO6:** Relate the data with needed information

Course Title: Corporate Accounting –II

- CO1:** Enlighten the students on the accounting treatment of Amalgamation and Merger
- CO2:** Familiarize the students with consolidated financial statement of Holding Companies
- CO3:** Draft Final accounts for life insurance Companies
- CO4:** Assess the preparation of general insurance companies account
- CO5:** Solid foundation in accounting and reporting requirements.
- CO6:** Solve the corporate related issues through accounting standards.

Course Title: Company Law

- CO1:** Recalls the basic concepts of company formation as per companies Act (Amendment) 2013
- CO2:** Outline the importance of various documents prepared and filed at the time of incorporation of company
- CO3:** Equip the students with the practical exposure on preparation of prospectus for capital mobilization
- CO4:** Familiarize the purpose, process of various meetings held at different point of time
- CO5:** Discuss the modes of closure of a company and the role of a liquidator
- CO6:** Categorize the provisions of Company Law as per business need.

Course Title: Goods and Services Tax and Customs Law

- CO1:** Discuss the tax system in India and taxation procedures.
- CO2:** Illustrate the provisions of Customs Laws
- CO3:** Introduce GST and examine the functioning of GST Council
- CO4:** Examine the Time and value of supply in GST
- CO5:** Complete the registration process in GST.
- CO6:** Familiarize with various provisions of Indirect Taxes

Course Title: Financial Services

- CO1:** Discuss about the Indian Financial System.
- CO2:** Demonstrate the overview of Money market and Capital market
- CO3:** Examine the functions of Stock Exchange and SEBI guidelines
- CO4:** Illustrate the various financial service providers for capital mobilization
- CO5:** Justify various financial assistance available for the community
- CO6:** Analyse the role of Financial services for the economic development

Course Title: Advanced Statistical Methods

- CO1:** Describe the Index numbers and cost of living index
- CO2:** Familiarize with the usage of Probability distributions
- CO3:** Analyse the different sampling techniques
- CO4:** Examine the testing of Hypothesis
- CO5:** Compare and contrast the variables through Correlation and Regression analysis

CO6: Utilize the statistical tools on Economics and Business decisions.

Course Title: Cost Accounting

CO1: Familiarize the concepts of cost accounting

CO2: Enhance knowledge on preparation of cost sheets in real time business

CO3: Facilitate the students to manage the material purchase control

CO4: Assess the Labour wage rate management system

CO5: Construct the allocation and apportionment of overhead cost

CO6: Invent the installation of costing system.

Course Title: Practical Auditing

CO1: Investigation into an overview of auditing procedures

CO2: Enhancing the knowledge on vouching, valuation and verification process

CO3: Categorise the provisions relating to depreciation and reserves

CO4: Acquire knowledge on the appointment, remuneration and removal of auditors

CO5: Synthesises the auditing procedures towards specialized audits

CO6: Recommend the students to take up auditing in a professional way

Course Title: Entrepreneurial Development

CO1: Create and develop entrepreneurial attributes among the students

CO2: Outline entrepreneurial development agencies and their services

CO3: Empower the students regarding functions of SSI

CO4: Facilitate the students for converting feasible business idea into successful business proposals

CO5: Discuss about the EDP's to make the students as real entrepreneurs

CO6: Empower the women towards Start – ups

Course Title: Financial Management

CO1: Expose the students on the role of finance

CO2: Investigate into the different cost attached with investments

CO3: Demonstrate the structuring of financial plans

CO4: Assess the different dividend models

CO5: Application of working capital management strategies

CO6: Enhance the management skills on the flow of finance in business

Course Title: Income Tax Law & Practice-I

CO1: Enlighten the basic concepts of direct taxation

CO2: Prioritize the computation of various components of salary

CO3: Assess the income from house property

CO4: Synthesis the provisions relating to income from business or profession

CO5: Construct the filing of returns

CO6: Empowers the practical exposure on income tax provisions

Course Title: Advanced Cost Accounting

CO1: Describe the computation of Job and Batch Costing

CO2: Construct the preparation of contract costing

CO3: Facilitate the assessment of process costing

CO4: Evaluate the methods of operating costing of service sector

CO5: Expose students of various applications of marginal costing

CO6: Acquisition of versatile costing knowledge and its techniques

Course Title: Management Accounting

CO1: Compare and contrast the management accounting with other forms of accounting

CO2: Enlighten the preparation and interpretation of financial statement analysis

CO3: Demonstrate the tools and techniques of assessing the profitability of business

CO4: Construct the flow and management of funds

CO5: Empower the students with budgetary control strategies

CO6: Enhance the decision making skill through the application of accounting tools

Course Title: Business Environment

CO1: Overview of concepts of Business Environment

CO2: Familiarize the Government and business relationship in India

CO3: Inspect the social responsibilities and analyse the cultural environment of business

CO4: Assess the economic environment and its impact on business

CO5: Compose the determinants to technological environment of business

CO6: Scan the business environment to improve the business performance

Course Title: Income Tax, Law & Practice-II

- CO1:** Examine the income under capital gains
- CO2:** Justify the various other sources income available for assesses
- CO3:** Recommend the assesses to club their income and set-off of their losses with other heads of income
- CO4:** Investigate the various deductions for computation of income
- CO5:** Inspect the power and duties of Central Board of Direct Taxes
- CO6:** Acquaint with the practical applicability of income tax provisions

Course Title: Human Resource Management

- CO1:** Outline the basic concepts of human resources practices in an organization
- CO2:** Assess the levels of performance of employees for their career advancement
- CO3:** Familiarize the welfare schemes and benefits offered to the employees
- CO4:** Equip with knowledge on conflicts and grievances handling mechanism
- CO5:** Design the Human Resource Information system modules.
- CO6:** Offer exposure on Human Resource practices in organisations.

Course Title: NME- Basics of Retail Marketing

- CO1:** Describe the importance of Retail Marketing
- CO2:** Examine the functions of retailing
- CO3:** Illustrate labelling and franchising of retailing.
- CO4:** Identify various retail communication tools
- CO5:** Discuss the Supply Chain Management.
- CO6:** Explain the role of Information Technology in Retailing

Course Title: NME- Fundamentals of Business Insurance

- CO1:** Recall the history and principles of Insurance
- CO2:** Find the various insurance agencies available
- CO3:** Examine the role of IRDA in insurance field.
- CO4:** Discuss the fundamental principles and policies of Life Insurance
- CO5:** Explain the principles and concepts of Fire Insurance.
- CO6:** Familiarize various Marine Insurance schemes

8. B.COM CORPORATE SECRETASYSHIP

PROGRAMME SPECIFIC OUTCOMES:

PSO1: B.COM CS students are equipped with skills to fit in to the jobs in the Corporate world in various fields such as Accounting, Finance, Marketing, IT, ITES, etc.

PSO2: Students have the skill to pursue professional courses such as ACS, CA and CMA.

PSO3: Pursue post-graduation like M.COM, M.COM C.S, M.COM Accounting and Finance and other related courses.

PSO4: Student can become entrepreneur by starting own business.

PSO5: Student can establish their own consultancy as GST Practitioner for online registration, Tax filing, TDS/TCS etc.

PSO6: Students can take up various government examinations such as Group I, Group II, Central Excise, Railway examination & on successful completion of the exam settle in to different kinds of jobs.

PSO7: Appear for CAT exams on successful completion of which pursue MBA in reputed business schools.

PSO8: Students can pursue banking exam and enter in to banking sector.

B.COM CORPORATE SECRETASYSHIP COURSE OUTCOME:

Course Title: Financial Accounting –I

CO1: Recalls the basic concepts, conventions and accounting process.

CO2: Enables the students to prepare financial statements in accordance with appropriate standards.

CO3: Determines the useful value of the life of Assets in the business

CO4: Familiarizes the students in managing their business loss through insurance claims

CO5: Distinguishes the two system of accounting and enables to summarize the necessary statements.

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Course Title: Business Communication

CO1: Describes the dimensions, methods and the barriers to communication

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- CO1:** Describe the computation of Job and Batch Costing
- CO2:** Construct the preparation of contract costing
- CO3:** Facilitate the assessment of process costing
- CO4:** Evaluate the methods of operating costing of service sector
- CO5:** Expose students of various applications of marginal costing
- CO6:** Acquisition of versatile costing knowledge and its techniques

Course Title: Management Accounting

- CO1:** Compare and contrast the management accounting with other forms of accounting
- CO2:** Enlighten the preparation and interpretation of financial statement analysis
- CO3:** Demonstrate the tools and techniques of assessing the profitability of business
- CO4:** Construct the flow and management of funds
- CO5:** Empower the students with budgetary control strategies
- CO6:** Enhance the decision making skill through the application of accounting tools

Course Title: Business Environment

- CO1:** Overview of concepts of Business Environment
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- CO3:** Inspect the social responsibilities and analyse the cultural environment of business
- CO4:** Assess the economic environment and its impact on business
- CO5:** Compose the determinants to technological environment of business
- CO6:** Scan the business environment to improve the business performance

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- CO1:** Examine the income under capital gains
- CO2:** Justify the various other sources income available for assesses
- CO3:** Recommend the assesses to club their income and set-off of their losses with other heads of income
- CO4:** Investigate the various deductions for computation of income
- CO5:** Inspect the power and duties of Central Board of Direct Taxes
- CO6:** Acquaint with the practical applicability of income tax provisions

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- CO1:** Outline the basic concepts of human resources practices in an organization
- CO2:** Assess the levels of performance of employees for their career advancement
- CO3:** Familiarize the welfare schemes and benefits offered to the employees
- CO4:** Equip with knowledge on conflicts and grievances handling mechanism
- CO5:** Design the Human Resource Information system modules.
- CO6:** Offer exposure on Human Resource practices in organisations.

Course Title: NME- Basics of Retail Marketing

- CO1:** Describe the importance of Retail Marketing
- CO2:** Examine the functions of retailing
- CO3:** Illustrate labelling and franchising of retailing.
- CO4:** Identify various retail communication tools
- CO5:** Discuss the Supply Chain Management.
- CO6:** Explain the role of Information Technology in Retailing

Course Title: NME- Fundamentals of Business Insurance

- CO1:** Recall the history and principles of Insurance
- CO2:** Find the various insurance agencies available
- CO3:** Examine the role of IRDA in insurance field.
- CO4:** Discuss the fundamental principles and policies of Life Insurance
- CO5:** Explain the principles and concepts of Fire Insurance .
- CO6:** Familiarize various Marine Insurance schemes

9. B.COM HONOURS

PROGRAMME SPECIFIC OUTCOMES:

- PSO1:** The emphasis of B.Com (Honours) programme is to nurture students as real commerce professionals and impart specialized skill sets in the areas of finance, accounting and taxation.
- PSO2:** It is a career oriented in nature that opens many job opportunities after successful

completion of the program. The graduates may be employed among various sectors in the field of finance, law, taxation, treasury, accounting, etc. They may also undergo research in the field of commerce and management with suitable postgraduate degrees.

PSO3: The B.Com (Hons.) graduates with relevant postgraduate degrees and teaching qualifications may be employed as academicians in primary, secondary and tertiary level.

PSO4: This programme aims at to equip students with the knowledge and competence in the field of business and commerce to pursue a professional career in the specified areas of specialization. Professional career includes CA, CMA, CS,MBA, CIMA,CPA,etc

B.COM HONOURS COURSE OUTCOMES:

Course Title: Financial Accounting-I

- CO1:** Preparations of Final Accounts
- CO2:** Preparation of Receipt and Payments Account
- CO3:** Bank Reconciliation Statement
- CO4:** Depreciation
- CO5:** Single Entry

Course Title: Marketing practice

- CO1:** Role and importance of marketing.
- CO2:** Marketing environment .
- CO3:** Consumer behaviour.
- CO4:** Marketing Mix.
- CO5:** Recent trends in marketing.

Course Title: Principles of Management

- CO1:** Functions of management.
- CO2:** various phases for decision-making process
- CO3:** Define Organization and briefly explain about the different types of organization.
- CO4:** styles of leadership
- CO5:** principles of effective communication

Course Title: Business Economics

CO1: Scope and Importance of Business Economics

CO2: Demand and Supply Functions

CO3: Diminishing Marginal utility

CO4: Perfect Competition

CO5: National Income

Course Title: Financial accounting-II

CO1: Hire Purchase System

CO2: Branch Accounting

CO3: Partnership Accounts

CO4: Dissolution

CO5: Tally

Course Title: Banking theory and practice

CO1: Commercial banking

CO2: E-banking

CO3: type of bank accounts

CO4: Crossing

CO5: Banking Regulations Act

Course Title: Services marketing

CO1: Relationship management.

CO2: Zone of tolerance.

CO3: New services.

CO4: Distributing services.

CO5: Evidence in service.

Course Title: Business Policy and Environment

CO1: Environmental Analysis

CO2: SWOT Analysis

CO3: FDI

CO4: Intellectual property

CO5: Corporate Communication

Course Title: Corporate Accounting

CO1: Underwriting of shares and Debentures

CO2: Acquisition of business

CO3: Final accounts of joint stock company

CO4: Alteration of share capital and internal reconstruction

CO5: Liquidator Final statement

Course Title: Business law

CO1: essential requirement for valid contract

CO2: What is meant by discharge of contract? Discuss the various method of discharge of contract

CO3: Agency

CO4: Sale of Goods Act.

CO5: Rights and duties of the Bailee

Course Title: Business Mathematics

CO1: Theory of Sets, Elements Types.

CO2: Binominal Theorem, Exponential and Logarithmic Series.

CO3: Limits and Continuity. Basic concepts of Differential Calculus

CO4: Algebra-Ratio, Proportion, Permutation and Combination

CO5: Interest and Annuity – Banker's Discount – Binary Number System

Course Title: Financial services

CO1: Financial Services: An Overview

CO2: Credit rating, commercial bill financing and consumer finance

CO3: Insurance, factoring and leasing

CO4: Merchant banking and mutual funds

CO5: Securitization

Course Title: Logistics And Supply chain Management

CO1: Functions of logistics management.

- CO2: Order processing.
- CO3: Transportation.
- CO4: Logistics information system.
- CO5: Bill of lading

Course Title: International Trade

- CO1: International Trade
- CO2: Balance of Trade
- CO3: Export Procedure and Documents
- CO4: Import Management
- CO5: International Economic Organizations.

Course Title: Business Statistics and Operation Research

- CO1: Mean, Median, Mode.
- CO2: Karl's Pearson Correlation-Rank Correlation, Regression. Hypothesis Testing
- CO3: Time series, Seasonal Variation
- CO4: OR meaning, scope, characteristics.
- CO5: Assignment and Transportation Problems.

Course Title: Insurance and Risk Management

- CO1: Risk management process.
- CO2: commercial property insurance, workers' compensation and risk financing.
- CO3: Personal risk management applications.
- CO4: Retirement planning and annuities - employee benefits.
- CO5: Privatization of insurance business in India - changes in Insurance Act.

Course Title: Special Accounts

- CO1: methods of valuation of Goodwill and shares
- CO2: Merger – amalgamation, absorption.
- CO3: 'Holding Company'
- CO4: Commercial bank
- CO5: Life Insurance and General Insurance.

Course Title: Company Law

CO1: Incorporation procedure and documents to be filed.

CO2: Details of prospectus.

CO3: Share capital, its kinds and procedure for alteration of share capital(increase or decrease)

CO4: Membership in company and meetings.

CO5: Management & administration and KMPs.

Course Title: Financial Management

CO1: Introduction to FM & Time value of money.

CO2: Cost of Capital, Leveragesand capital structure.

CO3: Capital Budgeting.

CO4: Dividend policy & Working Capital Management.

CO5: Financial markets.

Course Title: Customer Relationship Management

CO1: Customer Relationship.

CO2: Customer relationship survey design.

CO3: Relationships in marketing.

CO4: Customer partnerships.

CO5: Relationship management.

10. B.COM INFORMATION SYSTEMS MANAGEMENT

PROGRAMME SPECIFIC OUTCOMES:

PSO1: The students can get the knowledge, skills and attitudes during the end of the B.com degree course.

PSO2: By goodness of the preparation they can turn into a Manager, Accountant, Management Accountant, Cost Accountant, Systems Manager, Computer Programmer, Web developer, Teacher, Professor, Entrepreneur and Government employees.

PSO3: Students will prove themselves in different professional exams like C.A. , CMA, UPSC,. as well as higher education courses like MBA, MCA, MSW, M.Com, etc.

PSO4: The students will acquire the knowledge, skill in different areas of communication, decision making, innovations and problem solving in day to day business activities.

PSO5: Students will gain thorough systematic and subject skills within various disciplines of finance, accounting, management, communication, computer programming and systems.

PSO6: Students can also get the practical skills to work as accountant, audit assistant, HR trainee, computer operator, Web Developer as well as other financial supporting services.

PSO7: Students will learn relevant Advanced accounting career skills, applying both quantitative and qualitative knowledge to their future careers in business.

PSO8: Students will be able to do their higher education and can make research in the field of finance and commerce.

B.COM INFORMATION SYSTEM MANAGEMENT COURSE OUTCOMES:

Course Title: Financial Accounting:

CO1: To enable the students to learn principles and concepts of Accountancy.

CO2: Students are enabled with the Knowledge in the practical applications of accounting.

CO3: To enable the students to learn the basic concepts of Partnership Accounting, and allied aspects of accounting.

CO4: The student will get thorough knowledge on the accounting practice prevailing in partnership firms and other allied aspects.

CO5: To find out the technical expertise in maintaining the books of accounts. To encourage the students about maintaining the books of accounts for further reference.

Course Title: Principles of Management

CO1: To develop knowledge about evolution of management thoughts.

CO2: To better understanding of planning and decision making

CO3: To give an idea about organisation structure and different types of organisation

CO4: To make them familiarize with recruitment process and stages in selection

CO5: To provide idea about motivation, importance of communication and Principles of coordination.

Course Title: Basic computer skills for managers

- CO1:** To make the students understand and demonstrate the concept of Microsoft word. describe the features and functions of the categories of application.
- CO2:** To make the students aware about the basic features of PowerPoint.
- CO3:** To make students develop efficiency with specific sets of skills in Microsoft excel.
- CO4:** To help the students examine database concepts and explore the Microsoft Office Access environment.
- CO5:** To make student build a new database with related tables.

Course Title: Business Communication

- CO1:** To make the students aware about the business communication.
- CO2:** To understand the channels of communication and understand the structure and layout of business letters.
- CO3:** To extend business communication skills through the application and exercises for personal correspondences.
- CO4:** To extend business communication skills through the application and exercises for business correspondences.
- CO5:** To develop awareness regarding new trends in business communication, various media of communication and communication devices.

Course Title: Cost Accounting

- CO1:** Aimed to familiarize the concept of cost accounting
- CO2:** Helps to gather knowledge on preparation of cost sheet in its practical point of view
- CO3:** To facilitate the idea and meaning of material control with pricing methods
- CO4:** Develop the knowledge about remuneration and incentives
- CO5:** To introduce the concept of overhead cost

Course Title: HTML Programming

- CO1:** To familiarize students with the tags and works on with basic html programs.
- CO2:** To make students work with adding graphics to html and also different attributes.
- CO3:** To make students understand the concept of linking of documents using hyperlink and also external document reference.

CO4: To introduce the concept of dynamic HTML

CO5: To make students create a form using html tags.

Course Title: Importance of Emotional Intelligence

CO1: Demonstrate emotional intelligence and realize the benefits of high emotional intelligence at workplace.

CO2: Increased self awareness by identifying personal patterns.

CO3: Ability to positively handle negative traits.

CO4: Analyse positive traits and apply them in workplace.

CO5: Demonstrate SWOT analysis and create the art of celebrating life..

Course Title: Marketing Management

CO1: Identify the basic concepts and various environmental factors affecting marketing functions.

CO2: To enable the students to analyze the buyer behavior and market Segmentation.

CO3: Compare and analyze the classification of goods and apply the tools of branding, packaging, pricing and labeling.

CO4: To demonstrate the knowledge of advertising, public relations and sales promotion.

CO5: To critically analyze the recent changes in the field of marketing and discuss the types physical distribution.

CO6: Apply theoretical marketing concepts to the practical situation.

Course Title: Management Accounting

CO1: To enlighten the students thought and knowledge on management Accounting

CO2: Helps to give proper idea on financial statement analysis in practical point of view

CO3: To introduce the concept of fund flow

CO4: To introduce the concept of cash flow statement

CO5: To develop the know-how and concept of marginal costing with practical problems

Course Title: Programming in C

CO1: Identify situations where computational methods and computers would be useful.

CO2: Choose the right data representation formats based on the requirements of the problem.

- CO3:** Use the comparisons and limitations of the various programming constructs and choose the right one for the task in hand.
- CO4:** Demonstrate the call by value and call by reference in functions.
- CO5:** Ability to work with arrays of complex objects.
- CO6:** To use the concepts of edit, compile, debug, correct, recompile and run it.

Course Title: Personality Enrichment

- CO1:** Make use of techniques for self-awareness and self-development.
- CO2:** Apply the conceptual understanding of communication into everyday practice.
- CO3:** Understand the importance of teamwork and group discussions skills.
- CO4:** Develop time management and stress management.

Course Title: Programming in c Lab

- CO1:** Employ good software engineering practices such as incremental development, data integrity checking and adherence to style guidelines.
- CO2:** Design flow-chart, algorithm and program logic.
- CO3:** Apply programming concepts to compile and debug c programs to find solutions.
- CO4:** Demonstrate the concept of data types, loops, functions, array, pointers, string, structures and files.
- CO5:** To analyze the usage of data using primitive and structured types.

Course Title: Entrepreneurial Development

- CO1:** To develop entrepreneurial awareness among students.
- CO2:** Identify the process of entrepreneurship and institutional supports available to entrepreneurs and to prepare their mind set for thinking entrepreneurship as career.
- CO3:** Examine the process of starting a new venture and create business plan.
- CO4:** Identify the role of government in organizing EDPs.
- CO5:** Identify the role of entrepreneur in economic growth analyse strategic approaches in business
- CO6:** Generate ideas to empower women in entrepreneurship.

Course Title: Programming in C++

- CO1:** To identify the procedural and object oriented paradigm with concepts of streams, classes, functions, data and objects.
- CO2:** To apply dynamic memory management techniques using pointers, constructors, destructors, etc.
- CO3:** Utilize the concept of function overloading, operator overloading, virtual functions and polymorphism.
- CO4:** Compile the concepts of inheritance with the understanding of early and late binding, usage of exception handling, generic programming.
- CO5:** Demonstrate the use of various OOPs concepts with the help of programs.

Course Title: Programming in C++ Lab

- CO1:** Discuss the difference between object oriented programming and procedural oriented language and data types in C++.
- CO2:** Formulate the key concepts of object oriented programming and have an ability to design OO programs and appreciate the techniques of good design.
- CO3:** Analyze complex programming problems and optimize the Solutions.
- CO4:** Apply an understanding of ethical principles to problems.
- CO5:** Graduates will be able to program using C++ features such as composition of objects, operator overloading, inheritance, Polymorphism etc.

Course Title: Research Methods in Business

- CO1:** To identify the various kinds of research, objectives of doing research, research process.
- CO2:** Apply various research designs and sampling techniques.
- CO3:** Compare and analyse various data collecting methods, data processing and analysis .
- CO4:** Identify types of hypothesis and use different testing methods
- CO5:** Prepare research report and apply research methods in various areas.
- CO6:** Demonstrate the ability to carry out research projects.

Course Title: Quantitative Aptitude

- CO1:** To Train Competitive exams and other exams.
- CO2:** To enhance the problem solving skills, to improve the basic mathematical skills.

Course Title: Management Information System

- CO1:** To understand the leadership role of Management Information Systems in achieving business competitive advantage through informed decision making.
- CO2:** To analyze business information and systems to facilitate evaluation of strategic alternatives.
- CO3:** To effectively understand the classification of computers and database management system.
- CO4:** To demonstrate an understanding of system development lifecycle and functional information system.
- CO5:** To make the student understand the key features of decision support system and business process outsourcing.

Course Title: Financial Management

- CO1:** Identify the fundamentals of financial management, role of financial manager and sources of finance
- CO2:** Demonstrate Capital structure planning and analyse the types of leverages
- CO3:** To demonstrate the concepts in Financial Management which are important to make managerial Decisions.
- CO4:** Demonstrate capital budgeting ,Working capital Management and dividend policies which are used in making financial decisions
- CO5:** Able and confident to tackle practical financial problems of business.

Course Title: Web Technology

- CO1:** Outline the features of ASP.Net, ASP.Net Compilation Model, Code behind Model Execution Stages.
- CO2:** To analyze about ASP.NET Controls , ASP.Net Intrinsic Objects
- CO3:** To Utilize page layout, styles and text balance, site map, Master pages and content Pages, Navigation controls.
- CO4:** To create a dynamic webpage using ASP.Net.
- CO5:** Compile interactive web applications using ASP.NET.

Course Title: Web Technology Lab

- CO1:** Evaluate web application architecture, technologies and frameworks.

- CO2:** To design and deploy real time web applications in web servers.
- CO3:** Integrate frontend and backend web technologies in distributed systems.
- CO4:** Design the following static web pages required for a Design, develop and host a user friendly website.
- CO5:** Implement small to large scale project to provide live solution in web application development fields.

Course Title: E-Business

- CO1:** To demonstrate an understanding of the foundations and importance of E-business.
- CO2:** To prepare the students understand about the key features of Internet, Intranets and Extranets and explain how they relate to each other.
- CO3:** To make the students aware about the electronic payment systems.
- CO4:** To obtain the knowledge of e-retailing and its services.
- CO5:** To understand the basic concept of M-commerce and generation of mobile wireless technology.

Course Title: Database Management system

- CO1:** To understand the concepts of database models, languages and transaction management.
- CO2:** To identify and understand the types of database system architecture
- CO3:** To become familiar with the concepts of transactions.
- CO4:** To understand the various protocols of database management systems
- CO5:** To understand the concept of storage structures and recovery

Course Title: Human Resource Management

- CO1:** To aiming to enable the students in Human Resources Management.
- CO2:** To introduce the students about placement and training.
- CO3:** To facilitate the knowledge about performance appraisal and different methods.
- CO4:** To provide an idea about different compensation policies.

Course Title: Business Environment

- CO1:** To discuss about the Business and Business Environment.
- CO2:** To demonstrate the knowledge about the political environment and the Government relationship with business.

CO3: To identify the social environment of business.

CO4: Recognize the importance of economy and analyze the economic environment of business.

CO5: Identify the financial environment of business and the functions of various financial institutions.

Course Title: Software Project Management

CO1: To identify project planning and evaluation techniques.

CO2: To identify appropriate project approach and choosing technologies.

CO3: To explain the concept of estimation.

CO4: To determine an appropriate network planning models and identifying critical activities.

CO5: To demonstrate the concept of risk management during the project approach and planning.

Course Title: Project

CO1: Hands-on experience to the students in fields of management, marketing, information system, human resource, finance or software project management.

CO2: Enabling them to learn the nuance of working both as an individual and as a team.

11. B.COM MARKETING MANAGEMENT

PROGRAMME SPECIFIC OUTCOMES:

PSO1: The Bachelor of Commerce in Marketing Management B.Com (MM) is an undergraduate programme that prepares students for professional careers in the field of Marketing.

PSO2: The Programme aims at developing hard-core Marketing strategists and Marketing entrepreneurs. The department offers specialized papers in marketing, which is a combination of both theory and practical sessions. Subjects like Advertising and Sales Promotion; Service Marketing introduces the students to the practical world of marketing and advertising and provides them hands-on experience through workshops conducted by industry experts.

PSO3: The Programme focuses on proven practices and application of theory covering research, the nature of consumers, sales management, advertising, product management, law and ethics in the marketing environment.

- PSO4:** The Programme also introduces students to critical thinking skills by providing them with practical marketing principles, examples and case studies, all of which develop the students' cognitive abilities and enable them to develop marketing strategies for their organizations. In fact, marketing is a crucial component for any company to be able to make a mark in a competitive world.
- PSO5:** Students proceed through the curriculum in a planned sequence that culminates with the development of a marketing plan.
- PSO6:** As they gain expertise in the area of marketing, they can be placed in Sales & Marketing divisions of companies.
- PSO7:** Students can undertake research projects in the field of marketing like “Customer Satisfaction”, “Buyer behavior”, “Customer relationship management”, etc.
- PSO8:** Budding entrepreneurs can apply the knowledge gained by undergoing this course. For practical exposure market surveys can be done and the same can be applied by students who become entrepreneurs.
- PSO9:** With the knowledge gained from this course they can conduct Marketing research and provide market intelligence to the business entrepreneurs.
- PSO10:** Consultancy services in the area of Marketing can be done on a small scale basis to begin with, over the years of experience, they can provide expert advice to the business concerns in the field of marketing.

B.COM MARKETING MANAGEMENT COURSE OUTCOMES :

Course Title: Financial Accounting

- CO1:** Identify and discuss ethical issues related to the financial accounting profession.
- CO2:** Plan financial statements in accordance with generally accepted accounting principles.
- CO3:** Employ accepted accounting methods to evaluate and project business performance.
- CO4:** To Create an insight into the basics of accounting concepts and principles.
- CO5:** To prepare the students to have the foot hold in accounts

Course Title: Principles of Management

- CO1:** Debate and interact the management evolution and how it will affect future managers.
- CO2:** Adopt and estimate the influence of historical forces on the current practice of management

- CO3:** Recognize and correct social responsibility and ethical issues involved in business situations and logically fluent own position as such issues.
- CO4:** Elaborate how organizations change to a doubtful environment and recognize techniques managers use to influence and control the internal environment
- CO5:** Practice the process of management's four function planning, organizing, leading and controlling outcomes of each leadership style.
- CO6:** Convert and dissect both qualitative and quantitative information to isolate issues and formulate best control methods.

Course Title: Business Communication

- CO1:** Demonstrate the meaning, function, types of business communication.
- CO2:** Distinguish the oral and writing communication.
- CO3:** Interpret the channels of communication in business.
- CO4:** Illustrate the business letter layout
- CO5:** Discuss the various types of business letters.
- CO6:** Analysis the various types of report
- CO7:** Explain the various modern form of communication.

Course Title: Analytical and Logical reasoning

- CO1:** To enable students to learn to describe the problems-solving process
- CO2:** To make the students identify various problem- solving techniques and apply these in solving business problem.
- CO3:** To understand thinking models and practice exercises to help in thinking outside- the- box and generate a larger solution space.
- CO4:** To understand creativity and blocks to creativity.
- CO5:** To arrive at objective, will- reasoned decisions in a reasonable time.

Course Title: Business and Corporate law

- CO1:** Make the students understand about business and corporate law.
- CO2:** Develop knowledge on contract and various types of contract.
- CO3:** To help the students to understand the concept of sale of goods.
- CO4:** To make the students understand about companies and its types.

CO5: Inherit the knowledge about the legal methodology involved business by the students

Course Title: Banking

CO1: To provide knowledge about the various banking terms

CO2: To educate the students on the practical applications of banking service.

CO3: To acquire knowledge on banking and financial system in India.

CO4: To acquire knowledge about commercial banks and its products.

CO5: To aim familiarize banking system in India.

CO6: To create awareness

Course Title: Statistics and Operation research I

CO1: To introduce the basic concepts of statistics and understand the statistical techniques used for business data analysis.

CO2: To give an insight into operation research techniques used in business for critical decision making.

CO3: Identify and develop operational research model from the verbal description of the real system.

CO4: To familiarize the mathematical tools that are needed to solve optimization problems.

CO5: Use mathematical software to solve the proposed models.

Course Title: Emotional Intelligence

CO1: To learn the skills involved in emotional intelligence.

CO2: To evoke knowledge amongst students on emotional intelligence.

CO3: To make students understand the importance of self-awareness and self-development.

CO4: To discuss the importance of emotional intelligence.

CO5: Evaluate and analyzing the quality of students based certain test.

Course Title: Marketing Management

CO1: To teach the importance on brand and its impacts among customers.

CO2: To acquire knowledge about the role and importance of marketing.

CO3: To analysis how marketing helps to bridge the production and consumption gaps.

CO4: Identify the factors influencing consumer behavior and purchase decision.

CO5: To acquire knowledge about the 4p's of marketing concepts.

CO6: To identify the concepts of sales distribution and its role in marketing

CO7: To gain the concepts of various pricing strategy in marketing.

Course Title: Corporate Accounting

CO1: To analysis the preparation of accounting for companies.

CO2: To compute alteration of share capital.

CO3: To acquire knowledge on the accounting of share and company final accounts.

CO4: To enable students to prepare final accounts on joint stock company

CO5: To familiarize students with accounting treatments adopted for raising funds and redeeming them.

Course Title: E-business

CO1: To provide a stage to learn electronic business.

CO2: It talks about basics concepts of e-commerce.

CO3: Debate and elaborate theoretical and practical issues of conducting business over the internet and web.

CO4: To introduce concepts, tools and approaches to electronic-business.

CO5: Plan to help the students to develop skills to manage business in digital world.

Course Title: Entrepreneurial development

CO1: To create cautiousness among students about entrepreneurship and its impotence.

CO2: To keep the students inform about various financial academy that promote ed.

CO3: To encourage student to become entrepreneur.

CO4: Have the capacity to discuss destruct entrepreneurial treats

CO5: Know the parameters to assess.

Course Title: Business Statics and Operational research-II

CO1: The objectives of the paper are to introduce the basic concepts of operational research and linear programming to the students.

CO2: To introduce basic concepts of statics and understand the statistical techniques used for business data analysis.

CO3: To give an insight into operation research techniques used in business for critical decision making.

CO4: Demonstrate meaning, function and types of business statistics.

CO5: Calculate the mean, median, mode of the statistical methods.

Course Title: Retail marketing

CO1: Demonstrate the meaning, function, factors, types and roles of retailer.

CO2: Discuss the consumer behavior towards retail market.

CO3: Apply and use of buying motives factors in retail business.

CO4: Analyze the different types of store layout.

CO5: Discuss the function of retailing in India.

Course Title: Research Methods in Business

CO1: To make students aware about the importance of research in business

CO2: To make students acquire skills to locate problem areas in organization settings, and plan, organize, design, and conduct research to help solve the identified problems.

CO3: To develop understanding of the basic framework of research designs and techniques

CO4: To develop an understanding of various research designs and techniques

CO5: To organize and conduct research in a more appropriate manner.

Course Title: Financial Services

CO1: To impart knowledge about the various financial services.

CO2: To have knowledge of venture capital and mutual funds.

CO3: To familiarize the student with the natural scope of various types of financial services and to understand the regulatory environment in which they are undertaken

CO4: To acquire the skill necessary to participate in managing a financial service company.

CO5: To describe and apply financial concept theories and tools.

Course Title: Elements of Financial Management

CO1: To appreciate the role of finance in an organization.

CO2: To identify sources from where funds can be raised keeping in mind the cost and risk involved.

CO3: To familiarize the students the technique to be employed taking into consideration the risk and the return.

CO4: To understand the various finance services.

CO5: To understand how to take capital budgeting and investment decision.

Course Title: Business Economics

CO1: To develop basics understanding about the economics concepts, tools and techniques for their applications in business decisions.

CO2: To learn the basic theories in economics connection with business.

CO3: To understand the various economics models.

CO4: To introduces the students to the role of international. Trade

CO5: To understand demand and supply function.

Course Title: Human Resource Management

CO1: To understand the nature of human resources and its significance to the organization

CO2: To familiarize student with the various techniques in human resource management hat contribute to the overall effectiveness of an organization

CO3: To bring to the attention of the student the latest trends in managing human resources in an organization

CO4: Discuss the various human resource practices in organization.

CO5: Measuring of the various methods remuneration of personnel.

Course Title: Management Accounting

CO1: To formulate and analyze financial statements to help in managerial decision making.

CO2: To prepare statement like cash flow, fund flow and budgets etc. so as to enable the management to make meaningful decision and correct decision

CO3: To revise the various tools and techniques in cost control like variance, variance analysis and budgetary control

CO4: use a problem solving strategy to set up and solve word problems

CO5: To enable students to understand the need and importance of preparation of financial statements.

Course Title: International Marketing

CO1: Demonstrate, meaning, functions, need and importance of international marketing .

CO2: Analysis the meaning of balance of payments and design the balance of trade.

CO3: Demonstrating in detail about various pricing strategies.

CO4: Determine the documentation procedures on import and export trading.

CO5: Discuss the WTO and global markets.

Course Title: Advertising Management and Sales promotion

CO1: To learn the basic concept of advertising and sales promotion

CO2: To understand the various types of advertising

CO3: To discuss the various tricks of sale promotion.

CO4: Identifying and describing the various types of advertising.

CO5: Explain the steps involved in sales force management.

Course Title: Tourism Management

CO1: To learn various types of tourism sectors.

CO2: To know the impact of tourism in India's economy.

CO3: Possess skills and experience relating to the management and production of tourism in a professional setting.

CO4: Write clearly and concisely in the conventions of tourism studies.

CO5: Plan, lead, organize and control resources for effective and efficient tourism operations.

Course Title: Sales and Distribution Management

CO1: Discuss the role and responsibilities of a sales manager and sales force.

CO2: To analyze various types of sales distribution.

CO3: To outline the essentials of a good advertisement copy.

CO4: To explain the various types of advertising.

CO5: To outline the duties and responsibility of sales force.

Course Title: Cost Accounting

CO1: To understand the methods of cost accounting .

CO2: To familiarize the methods of application in cost accounting .

CO3: Demonstrate how materials, labor and overhead costs are added to a product at each stage of the product cycle .

CO4: Describe how cost accounting is used for decision making and performance evaluation.

CO5: Formulate overhead using predetermined rates and activity – based costing.

Course Title: Service Marketing

- CO1:** To promote a customer service oriented mindset .
- CO2:** To develop an understanding of the ‘state of the art’ service management thinking.
- CO3:** Demonstrate ability in evaluating service design.
- CO4:** To apply the concepts of 7P’S in service marketing.
- CO5:** Identify critical issues its service design including the service products and markets , building the service model and creating customer value.

Course Title: Supply Chain Management

- CO1:** Demonstrate operation purchasing methods and techniques on supplier management and supply in specific business context.
- CO2:** Discuss the strategies and importance of logistics elements and describe how they affect.
- CO3:** Develop a sound understanding of the important role of supply chain management in today’s business environment.
- CO4:** Analyze (big) data in supply chain .
- CO5:** Analyze the creation of new value in the supply chain for customers, society and the environment.

12. B.SC ADVANCE ZOOLOGY AND BIOTECHNOLOGY**PROGRAMME SPECIFIC OUTCOMES:**

- PSO1:** Knowledge about the nature and basic concepts of biological science and evolutionary relationships of major group of animals.
- PSO2:** Analyse the distribution of animals, plants and microbes and their relationships with the environment.
- PSO3:** Recognize the functions of the organism at the level of gene, genome, cell, tissue, organ, and organ-system
- PSO4:** Realize the importance of environment conservation and biodiversity.
- PSO5:** Perform procedures as per laboratory standards in the areas of Physiology, Biochemistry, Ecology, Biotechnology, Immunology and Microbiology.
- PSO6:** Realize the applications of biological sciences in Sericulture, Apiculture, Aquaculture, Economic Entomology and Pest Management, Genetic Engineering and Recombinant DNA technology. Microbiology and Industrial Biotechnology and Nanotechnology.

PSO7: Develop ethical, environmental and social responsibilities. Develop love and respect towards nature

PSO8: Able to integrate and apply the knowledge in interdisciplinary subjects and into their personal and professional life.

Students with a B.Sc. degree in Zoology may be employed as Research assistants, Environmental Managers, Quarantine Officers, Pest Management Officers, Collection Managers of Aquaria and Zoological Gardens, Primary and Secondary Teachers (with suitable teaching qualifications), Museum Curators (with suitable Postgraduate Degrees), Research Scientists (with suitable Postgraduate Degrees), University Academics (with suitable Postgraduate degrees). Students with the Zoology Degree Plus suitable Postgraduate qualifications may then be employed as Research Scientists, University Academics, Museum Curators.

B.SC ADVANCE ZOOLOGY AND BIOTECHNOLOGY CO:

Course Title: Diversity and Functional anatomy of Invertebrates

CO1: To acquire the basic knowledge on unicellular organisms

CO2: Explain Cellular organization in Porifera and Coelenterate and appreciation of polymorphic forms.

CO3: Outline the life history and parasitic adaptations in Platyhelminthes, Nematode. Explain the Phylum Annelida with an example.

CO4: Cognize the organization of *Penaeus* and *Pila* on significance of larval forms and foot in Molluscs.

CO5: Discuss Echinoderms and *Balanoglossus* with reference to larval forms and its systematic position.

Course Title: Diversity and Functional Anatomy of Chordates

CO1: Compare the basic and distinctive characters of each class and perceive knowledge on the development and affinities of Urochordata.

CO2: Discuss the development and affinities of Cephalochordata; Describe the organization of Cyclostomata and migration in Pteromyzon

- CO3:** Gain the knowledge on morphology and functional anatomy of *Labeo* and *Rana hexadactyla*. Illustrate the accessory respiratory organs; Identification of types of fins in fishes; Compare the parental care in Amphibia
- CO4:** Differentiate the morphology and functional anatomy of *Columba livia* and *Calotes versicolor*. Gain knowledge on arcades and fossa, the migration in birds and Palate in Birds
- CO5:** To acquire knowledge on the morphology and functional anatomy *Oryctolagus cuniculus* and to discuss types of dentition in mammals.

Course Title: Invertebrata and Chordata - Practical

- CO1:** To identify and classify the specimen upto order
- CO2:** Focus on the biological significance of the given animal and Relate the structure and function
- CO3:** Observation of the morphology and anatomy of Invertebrate and Chordate specimen through dissection
- CO4:** Collection and Identification of Invertebrate and Chordate specimens during field visit
- CO5:** Mounting the mouthparts of Cockroach, Mosquito, appendages of Prawn; Identification of Ctenoid Scale in Mugil.

Course Title: Cell and Molecular Biology

- CO1:** Distinguish the fundamental features of prokaryotic and eukaryotic cells and gain knowledge on the techniques to examine them.
- CO2:** Analyse the structure, function and the metabolic processes of cells.
- CO3:** Explain the structure and functions of cell membranes. Highlight the stages of cell cycle.
- CO4:** Outline the structure and cytochemistry of nucleus. Discuss the structure and biogenesis of ribosomes.
- CO5:** Compare the relationship of Golgi bodies with other cell components. Acquire the knowledge on functions with special reference to cell secretion.

Course Title: Genetics and Evolution

- CO1:** Apply Mendel's law to predict the outcome of crosses including the use of Punnett square.

- CO2:** Explain the chromosomal basis of sex determination. To predict the sex of the individuals with normal and abnormal complements of sex chromosomes. Illustrate the structure of DNA and mechanism of DNA replication; Predict the types of mutation.
- CO3:** Identify sex-linked characteristics and their transmissions. Critically analyze the linkage and crossing over. Highlight human genetics with reference to normal and abnormal karyotypes.
- CO4:** Compare Lamarckism and Darwinism; living and extinct fossils and Mimicry and coloration. Analyse Geological time scale. Cognize the convergent, divergent, parallel evolution and adaptive radiation in mammals.
- CO5:** Outline the role of genetics mechanism in evolution. Assess the key concept of genetic drift, founders principle. Grade the evolution of man.

Course Title: Cell Biology and Genetics – Practical

- CO1:** Gain knowledge on the handling of microscope and its applications.
- CO2:** Demonstrate blood smear preparation and enumeration of RBC and WBC.
- CO3:** Compare various cell stages during mitosis and meiosis; observation of buccal epithelium
- CO4:** Identify and discuss the prepared histology slides
- CO5:** Validate common mutants; Distinguish normal and abnormal karyotype and comparison of human blood group.

Course Title: Developmental Biology and Endocrinology

- CO1:** Cognize the basic concepts of developmental biology
- CO2:** Compare the process of cleavage, Blastulation, gastrulation, tubulation in frog and chick
- CO3:** Analyse the key concepts of development of membranes and formation of placenta. Assess the biochemical basis of embryology, regeneration and Illustrate the metamorphosis.
- CO4:** Acquire knowledge on the basic concepts of hormones and their mode of action. Discuss the gonadal hormones in mammals. Outline the hormonal control of metabolism, development, somatic pigmentation and reproduction in insects.
- CO5:** Compare the structure, functions and biological actions of endocrine glands

Course Title: Biotechnology and Nanotechnology

- CO1:** Discuss the history and Indian scenario in Biotechnology. Apply the knowledge of biotechnology in agriculture, food and pharmaceutical industry and beverages. Illustrate the Structure and reproduction of E.coli and Bacteriophage.
- CO2:** Assess the steps involved in gene cloning; Compare the methods of DNA cloning in different types of cloning vectors.
- CO3:** Discuss the techniques and importance of gene cloning in E.coli.
- CO4:** Design the principle, techniques and importance of plant and animal cell culture.
- CO5:** Compare the fundamental principles of nanotechnology and their application in medicine, environment, food and Veterinary.

Course Title: Animal Physiology, Biochemistry and Immunology

- CO1:** Realize the basis of enzymes and its regulation. Discuss the role of enzymes in digestion and digestion by symbionts. Deliberate the mechanism of absorption.
- CO2:** Discuss in depth the structure and physiology of Respiratory, Muscle, Excretory, Circulatory and Nervous system
- CO3:** Outline the Metabolism of carbohydrate, protein, lipids and its regulation.
- CO4:** Gains knowledge on the history and overall organization of the immune system
- CO5:** Compare the types and properties of antigens and antibodies. Analyse the agglutination, precipitation, complement fixation, immune fluorescence, ELISA and RIA.

Course Title: Biostatistics and Computer Applications for Life science

- CO1:** Apply basic statistical concepts commonly used in Life Sciences; Explain how statistical techniques studied are incorporated in the analysis of research data. Calculate descriptive statistics and able to draw graphs; Compute a sample mean, sample variance, and a sample standard deviation
- CO2:** Compile normal distribution and hypothesis testing.
- CO3:** Assess the basic components of a computer system. Analyse computer algorithms and highlight milestones in hardware and software development techniques.
- CO4:** Utilize the data storage devices in computer applications.
- CO5:** Create MS Word and MS Excel. Analyse the advantages, limitations and applications of internet.

Course Title: Medical laboratory techniques and Bioinstrumentations

- CO1:** Gain knowledge on collection of samples, maintaining records and preparation of reports
- CO2:** Demonstrate laboratory practice standards and assess the safety precaution and first – aid treatment.
- CO3:** Analyse the routine human medical samples
- CO4:** Discuss the causative organisms, mode of transmission, pathogenicity, symptoms and preventive measures of infectious diseases in man
- CO5:** Apply the knowledge in handling of the instruments utilized in common laboratories.

Course Title: Taxnomoy, Ecology and Paleontology

- CO1:** Outline the perspectives of systematics and history, classification, procedure and importance of taxonomy. Evaluate the population structure of species.
- CO2:** Compile the principles of ecology and ecosystem
- CO3:** Compare the importance of biogeochemical cycles. Analyse the Energy flow. Evaluate the ecological succession.
- CO4:** Gain knowledge on the freshwater and marine habitat. Assess the National and International Environmental organizations. Categorize the Red Data Book. Grasp the Wildlife management.
- CO5:** Cognize the principles and importance of Paleontology. Compare the fossils and fossilization with special mention of important fossil groups. Distinguish the different Eras, Periods and Epochs.

Course Title: Genetic engineering and Recombinant DNA technology

- CO1:** Analyse the basic concepts of gene cloning. Compare the enzymes and plasmids used in genetic engineering
- CO2:** Identify cloning vectors for E.coli. Illustrate the structure and reproduction of bacteriophages.
- CO3:** Differentiate the cloning vectors for yeast and fungi. Identification of recombinants from gene library. Compare the methods of clone identification.
- CO4:** Apply the various techniques used in genetic engineering and recombinant DNA technology. Discuss the role of DNA technology in Medicine, Agriculture and Environment.

CO5: Compute DNA sequencing method. Discuss the application of genetic engineering in medicine, alcohol production and vaccine production.

Course Title: Microbiology and Industrial Biotechnology

CO1: Outline the history of Microbiology. Compare the basic concepts of biogenesis and abiogenesis. Discuss the Principle, Working procedure and application of Microscopy.

CO2: Classify microorganisms. Distinguish the morphology of Bacteria, Viruses and Fungi. Demonstrate Gram positive and Gram negative bacteria and gain knowledge on microbial spores.

CO3: Acquire knowledge on microbial growth. Describe sterilization techniques.

CO4: Discuss the importance of food microbiology, dairy microbiology, water microbiology and soil microbiology

CO5: Cognize the microorganisms in production of industrial enzymes, antibiotics, biopolymer, biopreservative, recombinant proteins. Revise the products of animal and plant cell culture.

Course Title: SERICULTURE AND APICULTURE

CO1: Compare the types of silkworm. Illustrate the life cycle. Analyse silkworm rearing and economic importance.

CO2: Outline the role of Central Silk Board in the Development of sericulture.

CO3: Analyse the anatomy and physiology of honey bee. Illustrate the life history of honey bee.

CO4: Differentiate the types of bee hive, structure. Assess the care and management.

CO5: Gain knowledge on the extraction of honey and beeswax. Enumerate their use and their yield in national and international market. Promote start-ups in small scale industries.

Course Title: Economic Entomology and Pest Management

CO1: Illustrate the insect structure. Compare the functions of various insects.

CO2: Identify beneficial and harmful insects

CO3: Enumerate the insect pests of stored grains. Compare the insect vectors of plants, animals and man.

CO4: Apply the insect pest control methods

CO5: Formulate the principles of insecticides. Assess the precautions in handling pesticides.

Course Title: Practical Animal physiology, Biochemistry, Developmental biology and Immunology

- CO1:** Outline the principle, working mechanism of BP apparatus, Respirometer and Kymograph.
- CO2:** Observe and analyse the digestive enzymes in cockroach. Comparison of nitrogenous waste products and Estimation of oxygen consumption
- CO3:** Analyse the principle, procedure and significance of qualitative analysis of sugar; Estimate the glycogen and protein.
- CO4:** Identify and comment on the biological significance of the histological slides; Observe the specimens and materials related to developmental biology.
- CO5:** Enumerate the applications of immunology.

Course Title: Practical: Environmental biology, Biotechnology and Microbiology

- CO1:** Outline the principle, methodology and significance of estimation of oxygen, salinity, carbon dioxide, carbonates, bicarbonates and calcium in the given water samples.
- CO2:** Demonstration of PCR, blotting techniques, staining techniques and media preparations.
- CO3:** Identify planktons; Compare the adaptation of aquatic and terrestrial animals based on museum specimens and microbial slides.
- CO4:** Gain knowledge on the basic principles of instruments through demonstration and experimentation.
- CO5:** Collect and Identify the flora and fauna of various natural ecosystem during field visit

Course Title: Allied Zoology I

- CO1:** Outline the general characters and classification of invertebrates. Compare the morphology, anatomy and life history of Protozoa, Porifera, Coelenterata and Platyhelminthes.
- CO2:** Differentiate the morphology, anatomy, larval forms and distinctive characters of Phylum Annelida, Arthropoda, Mollusca and Echinodermata.
- CO3:** Assess the distinctive characters and classification of Chordata. Cognize the affinities of Prochordates. Realize the general characters and classification of class Pisces with an example.
- CO4:** Differentiate the morphology and anatomy of class Amphibia and Reptilia.

CO5: Compare and contrast between class Aves and Mammalia

Course Title: Allied Zoology II

CO1: Outline the fundamental features of an animal cell. Discuss the cell structure, function and the metabolic processes of cells in terms of cellular organelles, membranes and biological molecules. Enumerate the concepts of molecular structure of genes and the inborn errors of metabolism.

CO2: Recognize the basic concepts of developmental biology. Explain the process of gametogenesis and fertilization. Discuss cleavage and gastrulation in chick.

CO3: Gain knowledge on the physiology of the Digestive, Excretory and Cardiovascular systems.

CO4: Apply the basic concept of Ecology. Enumerate the environmental degradation and greenhouse effect.

CO5: Discuss Darwinism and Lamarckism. Explain the factors responsible for speciation.

Course Title: Allied Zoology Practical

CO1: Identify and classify the Specimen.

CO2: Observe and comment on the biological specimen

CO3: Compare the morphology and anatomy of Invertebrate and Chordate specimen through dissection

CO4: Demonstrate the Mounting of mouthparts of Cockroach, Mosquito and appendages of prawn and their significance

Course Title: Aquaculture

CO1: Analyze the physical and chemical characteristic features of water bodies in fisheries. Compare the types of culture system in fisheries.

CO2: Formulate the feed for cultivable species. Assess the maintenance and management of different types of fish ponds.

CO3: Cognize the importance of induced breeding in Indian major carps. Prepare live feed for carp culture.

CO4: Apply the various techniques practiced in culturing of fishes and oysters.

CO5: Outline the culture of marine and freshwater prawns. Identify the pathogens on fish and prawn. Analyse the use of crafts and gears in fishing technology. Assess the fish preservation and processing. Discuss the role of agencies involved in the Aquaculture.

Course Title: Public Health and Hygiene

CO1: Outline the scope of Public health and hygiene. Compare the Nutritional deficiencies and nutritional requirement for special group of children.

CO2: Identify various sources of pollution on their impact on the environment and its control measures.

CO3: Analyse the causative agents, pathogenicity and control measures of communicable diseases.

CO4: Enumerate the cause, symptoms, prevention, control, early diagnosis and treatment of non-communicable diseases.

CO5: Gain knowledge on first-aid and nursing. Analyse the role of Government, World Health Organization and Non - governmental Voluntary Health Organizations in Health education.

15. B.SC COMPUTER SCIENCE

PROGRAM SPECIFIC OUTCOMES:

PSO1: Analyze and Design real time problems by selecting right data structure and apt algorithmic technique.

PSO2: Apply basic concepts of problem solving methods to vary applications.

PSO3: Develop small software by selecting appropriate programming C/ Java etc. based on the type of application being developed.

PSO4: Compare and understand the functionalities of OSI and TCP models.

PSO5: Apply suitable Software Engineering methodologies to the problem at hand.

PSO6: Demonstrate basic Computer Architecture and functions of Operating System.

PSO7: Create website using HTML, Java, PHP and VB.NET.

PSO8: Prepare industry ready skills through Python programming and Visual Basic Applications.

B.SC COMPUTER SCIENCE COURSE OUTCOMES:

Course Title: Problem solving using C programming

- CO1:** Predict and Analyze problem definition.
- CO2:** Design and Formulate algorithm for solving problem.
- CO3:** Design Programming using statements.
- CO4:** Demonstrate Control flow verification.
- CO5:** Explain importance function in avoidance of code redundancy.
- CO6:** Revive Data handling using storage classes.
- CO7:** Discuss manipulation of Array.
- CO8:** Design Real time entities through structure.
- CO9:** Compare static and dynamic allocation using Arrays and Pointers.
- CO10:** Compute external file data through file handling methods.

Course Title: Problem Solving Using C practical

- CO1:** Demonstrate calculator through arithmetic operators.
- CO2:** Illustrate Conditional statements using 'if' statements.
- CO3:** Demonstrate logical and relational operators using Condition statements.
- CO4:** Illustrate iteration using 'for, while and do-while 'statement.
- CO5:** Demonstrate branching statement through 'switch' statement.
- CO6:** Demonstrate and compute Fibonacci series using function.
- CO7:** Demonstrate factorial of number using recursive function.

Course Title: Non Major Elective: HTML Practical

- CO1:** Design webpage with various text formats.
- CO2:** Design webpage with ordered and unordered list.
- CO3:** Build web pages with tables.
- CO4:** Demonstrate web pages with background and foreground images.
- CO5:** Build web page with internal and external linking.
- CO6:** Design applications to view more than one web page in a single window using frame tag.
- CO7:** Create forms.
- CO8:** Create Simple websites.

Course Title: Analysis of Algorithms and Data Structures

- CO1:** Discuss design principles and concepts of algorithms and Analyze the efficiency of algorithms using time and space complexity.
- CO2:** Compare the computational efficiency of various sorting and searching techniques.
- CO3:** Analyze various static data structures like array implementation of stack and queue.
- CO4:** Compare static data structures with dynamic data structures such as linked list.
- CO5:** Demonstrate the data structures tree and graphs and their traversal methods.

Course Title: Analysis of Algorithms and Data Structures Using C Practical

- CO1:** Illustration of iterative algorithmic technique with insertion sort, bubble sort and selection sort
- CO2:** Demonstrate divide and conquer algorithm using quick and merge sort
- CO3:** Explain algorithmic technique backtracking using heap sort
- CO4:** Implement stack and apply stack for applications like postfix expression and evaluation of expressions
- CO5:** Discuss dynamic data structures linked list and doubly linked list and their applications in formulating data structures like trees and graphs

Course Title: Non Major Elective-Visual Basic Applications Practical

- CO1:** Identify Visual Basic applications
- CO2:** Analyze how to perform operations and store results.
- CO3:** Explain the concept of data-driven program execution flow control in Visual Basic applications
- CO4:** Use additional Visual Basic controls
- CO5:** Design Macros to implement loops

Course Title: Programming in Java

- CO1:** Recall basic programming constructs
- CO2:** Utilize branching and looping for decision making
- CO3:** Compare and Revive class through structures of C programming
- CO4:** Demonstrate object oriented programming through real time entities
- CO5:** Apply string buffer class to provide flexible memory management

- CO6:** Explain how multitasking is achieved and processor efficiency is improved by multithreading
- CO7:** Create own packages and handle runtime errors by exception handler
- CO8:** Compare and analyze I/O streams
- CO9:** Create web site
- CO10:** Use utility packages
- CO11:** Demonstrate GUI through awt controls
- CO12:** Design event-driven programming

Course Title: Programming in Java Practical

- CO1:** Revive basic programming like arithmetic operation and decision making statements
- CO2:** Apply object oriented concepts class and object
- CO3:** Develop programs using recursive method
- CO4:** Demonstrate polymorphism through method overloading and method overriding
- CO5:** Compare different types of inheritance in Java language
- CO6:** Illustrate multithreading
- CO7:** Handle runtime errors using Exception handling
- CO8:** Create basic applet programs
- CO9:** Design web page by using different layouts and awt controls

Course Title: VB.NET Programming and Database Management System

- CO1:** Design and construct application using elements in .net framework
- CO2:** Integrate variable and operators for calculations
- CO3:** Determine decision structure and iterations
- CO4:** Create a vb.net program using functions, menus and toolbars
- CO5:** Build vb.net program using MDI form
- CO6:** Demonstrate the database and their features
- CO7:** Design a database using classes and relational model
- CO8:** Illustrate vb.net program with database connection

Course Title: RDBMS with VB.NET Practical

- CO1:** Explain the concept of click event and change event
- CO2:** Create a web form using tools
- CO3:** Demonstrate calculation, input validation using compare validator, request field validator

CO4: Discuss variables, hyperlink and methods

CO5: Design and build vb.net program to connect database

Course Title: Operating systems

CO1: Demonstrate how operating system acts as user interface and various types of Operating systems

CO2: Identify components of operating system and their functions

CO3: Discuss various process management concepts like scheduling

CO4: Illustrate concurrent processing , mutual exclusion and synchronizations

CO5: Identify the necessary and sufficient condition for deadlock and how to detect, avoid , prevent and recover Deadlock

CO6: Elucidate Memory management techniques like paging, segmentation, demand paging

CO7: Explain file management system

Course Title - Digital Logic and Computer Architecture

CO1: Evaluate Number systems and number system conversion

CO2: Acquire the knowledge about basic logic gates and Boolean functions

CO3: Apply the concepts of combinational and sequential logic circuit design.

CO4: Demonstrate the structure, function and characteristics of computer systems

CO5: Identify the elements of instruction sets

CO6: Achieve knowledge about registers and its types

CO7: Elucidate various levels of memory hierarchy and stack organization.

CO8: Rate the concepts of interrupts and its applications

CO9: Acquire knowledge about central processing unit (CPU), and its various operations

CO10: Discuss about the approach of micro programmed control codes

Course Title - Web Programming with PHP and MySQL

CO1: Revive basic programming construct through PHP

CO2: Demonstrate the way arrays are handled in PHP

CO3: Create user defined functions with PHP

CO4: Explain sessions and cookies

CO5: Create sample PHP applications

CO6: Identify My SQL tools

- CO7:** Revive databases and tables
- CO8:** Design and manipulate tables using DDL and DML
- CO9:** Analyze various queries and sub queries in My SQL
- CO10:** Connect My SQL with PHP, process result set queries

Course Title - Web Programming with PHP and MySQL Practical

- CO1:** Design simple web page using PHP
- CO2:** Revive basic programming techniques with PHP
- CO3:** Create Sessions and Cookies
- CO4:** Demonstrate simple application to validate input
- CO5:** Design table with constraints
- CO6:** Use aggregate functions
- CO7:** Demonstrate connecting My-SQL with PHP

Course Title - Interdisciplinary Elective – Internet and its applications

- CO1:** Design webpage with different text formats
- CO2:** Design webpage with ordered and unordered list
- CO3:** Demonstrate web pages with background and foreground images
- CO4:** Build web pages with tables
- CO5:** Design applications to view more than one web page in a single window using frame tag
- CO6:** Create forms
- CO7:** Create Simple websites

Course Title: Software Engineering

- CO1:** Identify and define the problem to be solved
- CO2:** Plan the development process through software life cycle models
- CO3:** Predict and estimate software cost
- CO4:** Analyze and prepare software requirement specification
- CO5:** Select languages and processors for requirement specification
- CO6:** Compare and select software design techniques
- CO7:** Fix and review milestones, walkthrough and inspection
- CO8:** Implement the software as per standards and guidelines
- CO9:** Assure quality of software product

CO10: Verify and validate software product

Course Title: Python Programming

CO1: Use if-else statements and switch-case statements to write programs in Python to tackle any decision-making scenario

CO2: Explain store and retrieve information using variables

CO3: Apply how to write loops and decision statements in Python.

CO4: Identify how to use lists, tuples, and dictionaries in Python programs

CO5: Determine how to use exception handling in Python applications for error handling

Course Title: Python Programming Practical

CO1: Acquire programming skills in core Python.

CO2: Acquire Object Oriented Skills in Python

CO3: Develop the skill of designing Graphical user Interfaces in Python

CO4: Develop the ability to write database applications in Python

CO5: Develop cost-effective robust applications using the latest Python trends and technologies

Course Title: Data Communication & Networking

CO1: Explain the concepts of Network Topology and OSI reference models

CO2: Discuss the concepts of error correction and error detection

CO3: Analyze the concepts of Multiplexing and Telephone Systems

CO4: Demonstrate the concepts of circuit switching and Connection and Connection Oriented Services

CO5: Evaluate the concept of routing algorithms and client/server architecture

CO6: Illustrate the concepts of Security and types of attacks and the authentication codes

Course Title: Data Mining

CO1: Demonstrate advanced knowledge of data mining concepts and techniques

CO2: Identify appropriate data mining algorithms to solve real world problem

CO3: Compare and evaluate data mining techniques like classification, prediction, clustering and association rule mining

CO4: Explain the analyzing techniques of various data

CO5: Evaluate various mining techniques on complex data objects

CO6: Determine whether a real world problem has a data mining solution

Course Title: Software Testing

CO1: Identify software development life cycle models

CO2: Analyze various testing methods like white box, black box testing and integrated testing

CO3: Compare various testing methodologies such as system acceptance testing, performance testing and regression testing

CO4: Apply object oriented system testing

CO5: Analyze usability and accessibility of testing organizational structure of testing teams

CO6: Demonstrate the steps involved in planning, managing , executing and reporting test

CO7: Analyze and compare testing metrics

Course Title: Data Science

CO1: Demonstrate the tools in data science.

CO2: Explain data type, control structure and functions

CO3: Analyze how to collect, clean and prepare a data

CO4: Explain the method of summarizing the data

CO5: Evaluate the data science findings

Course Title: Cloud Computing

CO1: Describe the overall organization of data and storage

CO2: Explain the concept of cloud computing

CO3: Analyze the trade-offs between deploying application in the cloud and over the local infrastructure

CO4: Compare the advantages and disadvantages of various cloud computing platforms

CO5: Analyze the performance of scalability and availability in the underlying cloud technologies and software

CO6: Solve a real world problem using cloud computing through group collaboration

CO7: Deploy applications over commercial cloud computing infrastructure

Course Title: Mini Project

CO1: Address the real world problem and find the required solution

CO2: Perform requirement analysis and identify design methodologies

CO3: Apply advanced programming techniques

CO4: Present technical report by applying different visualization tools and Evaluation metrics

CO5: Creates a new application using the previously learned concepts

Course Title: Fundamentals of Multimedia

CO1: Explore the different roles, skill sets, jobs and equipment associated with the development of digital media.

CO2: Examine the processes involved in producing content to meet a specific communication goal toward a target audience

CO3: Define multimedia to potential clients.

CO4: Identify and describe the function of the general skill sets in the multimedia industry002E

CO5: Identify the basic components of a multimedia project

CO6: Identify the basic hardware and software requirements for multimedia development and playback.

Course Title: Android Application Development Practical

CO1: Install and configure Android application development tools.

CO2: Design and develop user Interfaces for the Android platform

CO3: Design and develop user Interface with view displaying pictures and menus

CO4: Explain data persistence

CO5: Develop android service and public android application

Course Title: Artificial Intelligence

CO1: Demonstrate knowledge of building blocks of AI as presented in terms of intelligent agents

CO2: Analyze and formulize the problem as a state space, graph and game based techniques to solve them

CO3: Critique intelligent algorithms for constrain satisfaction problems and also design intelligent systems for game playing

CO4: Attain the capability to represent various real life problem domains

CO5: Apply concept of Natural language processing to problems leading to understanding of cognitive computing

CO6: Analyze the strength and weakness of AI approaches to knowledge intensive problem solving

16. B.SC INFORMATION TECHNOLOGY

PROGRAM SPECIFIC OUTCOMES:

Students with B.Sc degree in Information Technology will possess the ability to understand, analyze and develop software programs in the areas related to Big Data , Cloud Computing ,R programming , web design, application program, database , graphics and User Interface Programming for efficient design of technology of varying complexity.

B.SC INFORMATION TECHNOLOGY COURSE OUTCOMES

Course Title: Programming in C & Linux

- CO1:** Implement the basic concepts of C programming.
- CO2:** Practice the use of conditional and looping statements.
- CO3:** Implement arrays, functions and pointers.
- CO4:** Gain skills to handle strings and files.
- CO5:** To provide introduction to UNIX operating system and its File System.
- CO6:** To provide a comprehensive introduction to Shell Programming, Services and Utilities.

Course Title: Programming in C & Linux LAB

- CO1:** Read, analyse and trace the execution of programs written in C language.
- CO2:** Write programs that perform operations using derived data types.
- CO3:** Develop conditional and iterative statement to develop c program.
- CO4:** Implement Programs with arrays, function and perform various arithmetic operations.
- CO5:** You will be able to run various LINUX commands on a standard LINUX Operating system.
- CO6:** You will be able to do shell programming on LINUX OS.

Course Title: Computing Skills

- CO1:** Recognize when to use each of the Microsoft Office programs to create professional and academic documents.
- CO2:** Use Microsoft Office programs to create personal, academic and business documents following current professional and/or industry standards.

- CO3:** Apply skills and concepts for basic use of computer hardware, software, networks, and the Internet in the workplace
- CO4:** Solve common business problems using appropriate Information Technology applications and systems.
- CO5:** Utilize the Internet Web resources and evaluate on-line e-business system.
- CO6:** Describe the usage of computers and why computers are essential components in business and society.

Course Title: Programming in Java

- CO1:** Designs will demonstrate the use of good object-oriented design principles including encapsulation and information hiding.
- CO2:** Knowledge of the structure and model of the Java programming language.
- CO3:** Evaluate user requirements for software functionality required to decide whether the Java programming language can meet user requirements.
- CO4:** Use the Java programming language for various programming technologies.
- CO5:** Propose the use of certain technologies by implementing them in the Java programming language to solve the given problem.
- CO6:** Develop software in the Java programming language.

Course Title: Programming in Java Lab

- CO1:** Implement Object Oriented programming concept using basic syntaxes of controls Structures, strings and function for developing skills of logic building activity.
- CO2:** Identify classes, objects, members of a class and the relationships among them needed for a finding the solution to specific problem.
- CO3:** Demonstrates how to achieve reusability using inheritance, interfaces and packages and describes faster application development can be achieved.
- CO4:** Develop Java applications with threads and generics classes.
- CO5:** Demonstrate understanding and use of different exception handling mechanisms and concept of multithreading for robust faster and efficient application development.
- CO6:** Build Java applications using exceptions and I/O streams.

Course Title: HTML Lab

- CO1:** Implement basic concepts in HTML.

CO2: Insert and format text and create basic web pages.

CO3: Implement a variety of hyperlinks to connect pages and communicate with users via email link.

CO4: Insert and control images on a web page.

CO5: Apply CSS styles to some page elements.

CO6: Create, modify and format a basic layout.

Course Title: Design and Analysis of Algorithms

CO1: Identify and choose appropriate algorithm design techniques for solving problem.

CO2: Ability to apply algorithm design techniques for developing algorithms.

CO3: Ability to design various searching, sorting and graph traversal algorithms.

CO4: To apply algorithm design for shortest path in multistage graph method.

CO5: To Know how to use depth first and breath-first search of graphs and the analyses of these.

CO6: Classify the different algorithm design techniques for problem solving and Know a variety of greedy methods.

Course Title: Data Analysis using Spread Sheet

CO1: To know how to group cells and use outlines to manipulate the worksheet; protect data in worksheets and workbooks.

CO2: To demonstrate the use of advance Excel Formula.

CO3: To analyse the use of If conditions with advance Excel functions.

CO4: Use a variety of data validation techniques and advanced filters to analyze data in a list.

CO5: To Know how to use critical thinking and problem solving skills in designing the spreadsheets for various business problems.

Course Title: Data Analysis using Spread Sheet lab

CO1: Implement Excel basic functions and charts.

CO2: To work with mathematical text and date function.

CO3: Implements sorting and filtering concepts in Excel.

CO4: To work with Pivot tables.

CO5: To share the workbook using VBA Macros.

Course Title: Operating System

- CO1:** Describe the important computer system resources and the role of operating system in their management policies and algorithms.
- CO2:** Identify the process management policies and scheduling of processes by CPU.
- CO3:** Evaluate the requirement for process synchronization and coordination handled by operating system.
- CO4:** Describe and analyze the memory management and its allocation policies.
- CO5:** Identify use and evaluate the storage management policies with respect to different storage management technologies.
- CO6:** Identify the need to create the special purpose operating system.

Course Title: Python Programming

- CO1:** Interpret the fundamental Python Syntax and Semantics.
- CO2:** Express Proficiency in the handling of Strings and Function.
- CO3:** Determine the method to create and manipulate python program by utilizing the data structure.
- CO4:** To create python program using object and class.
- CO5:** To explore the mechanism of modular programming using modules and package.
- CO6:** To explain data science concepts using Python.

Course Title: Database Management System

- CO1:** Explain the features of database management systems and File Storage.
- CO2:** Design conceptual models of a database using ER modelling
- CO3:** Create and populate a database for a real life application, with constraints and keys, using SQL.
- CO4:** Retrieve any type of information from a data base by formulating complex queries in SQL.
- CO5:** Analyze the existing design of a database schema and apply concepts of normalization to design an optimal database
- CO6:** Illustrate the concepts of transaction, Concurrency and Recovery techniques in Database.

Course Title: Python Programming Lab

- CO1:** Describe the Numbers, Math functions, Strings.
- CO2:** Express different Decision Making statements and Functions.
- CO3:** Interpret Object oriented programming in Python.
- CO4:** To program with the concepts of List, Tuples and Dictionaries in Python.
- CO5:** Compare and summarize different File handling operations.

Course Title: Word Press

- CO1:** Create a functional multi-page website using Word Press on a remote server.
- CO2:** Use basic HTML and CSS to edit content and modify formatting in a Word Press website.
- CO3:** Installing and configuring plugging and widgets.
- CO4:** Able to demonstrate effective use of navigation on the site to enhance usability.
- CO5:** Managing site content using Categories and tags.
- CO6:** Choose the topic and design a wireframe, set site goals, identify target audience, and create a colour scheme.

Course Title: Big Data Analytics

- CO1:** Analyze the key issues in big data management and its associated applications in intelligent business and scientific computing.
- CO2:** Acquire fundamental enabling techniques and scalable algorithms like in big data analytics.
- CO3:** Interpret business models and scientific computing paradigms, and apply software tools for big data analytics.
- CO4:** Achieve adequate perspectives of big data analytics in various applications like recommender systems, social media applications etc.
- CO5:** Modelling and design of Social Networking Metrics.
- CO6:** Ability to recognize and implement various ways of selecting suitable model parameters for different machine learning techniques.

Course Title: Data Science Using R

- CO1:** Recognize and make appropriate use of Matrices, frames and creating vectors.
- CO2:** Use R to create sophisticated figures and graphs.

- CO3:** Identify and implement multiple elements of list, nested elements.
- CO4:** Design and write functions in R and implement simple iterative algorithms.
- CO5:** Cleaning and restructuring data using the grammar of data manipulation.
- CO6:** Explain and apply function and looping statement in R Programming.

Course Title: R Programming Lab

- CO1:** Navigate and optimize the R integrated development environment (IDE) R Studio.
- CO2:** Import external data into R for data processing and statistical analysis.
- CO3:** Learn the main R data structures – vector and data frame.
- CO4:** Produce data visualizations with the ggplot package.
- CO5:** Compute basic summary statistics.

Course Title: Software Project Management

- CO1:** Estimate project cost and perform cost-benefit evaluation among projects.
- CO2:** Perform project scheduling, activity network analysis and risk management.
- CO3:** Apply schedule and cost control techniques for project monitoring including contract management.
- CO4:** Apply quality models in software projects for maintaining software quality and reliability.
- CO5:** Use suitable project organization structure, leadership, decision and motivation styles, proper safety and ethical practices and be responsible to the society.

Course Title: NOSQL

- CO1:** Master the basics of SQL efficiently and apply object-oriented features for developing database applications.
- CO2:** Compare and Contrast NoSQL databases with each other and Relational Database Systems.
- CO3:** Compute the field, projection queries and apply the aggregation operators.
- CO4:** Demonstrate the knowledge of Key-Value databases, MongoDB and Relationships.
- CO5:** Demonstrate competency in selecting a particular NoSQL database for specific use cases.

Course Title: Software Engineering

- CO1:** Analyse and demonstrate basic knowledge in software engineering.

- CO2:** Identify requirements analyze and prepare models.
- CO3:** Plan, schedule and track the progress of the projects.
- CO4:** Design & develop the software projects.
- CO5:** Identify risks; manage the change to assure quality in software projects.
- CO6:** Apply testing principles on software project and understand the maintenance concepts.

Course Title: UI Programming

- CO1:** Identify the structure of an HTML document, HTML elements and attributes.
- CO2:** Create HTML5 structural semantic markup.
- CO3:** Create cascading stylesheets (CSS) for device and browser integration.
- CO4:** Develop basic programming skills using JavaScript.
- CO5:** Compute java script programming concepts (variable, control structure, loops).

Course Title: UI Programming Lab

- CO1:** Analyse and apply the role of languages like HTML, CSS and JavaScript.
- CO2:** Analyse a web page and identify its elements and attributes.
- CO3:** Demonstrate the important HTML tags for designing static pages and separate design from content using Cascading Style sheet.
- CO4:** Utilize the concepts of dialog box and operators in java script.
- CO5:** Create dynamic web pages using JavaScript control structure and events procedure.

Course Title: Cloud Computing

- CO1:** Analyze the Cloud computing setup with its vulnerabilities and applications using different architectures.
- CO2:** Design different workflows according to requirements and apply map reduce programming model.
- CO3:** Apply and design suitable Virtualization concept, Cloud Resource Management and design scheduling algorithms.
- CO4:** Create combinatorial auctions for cloud resources and design scheduling algorithms for computing clouds.
- CO5:** Assess cloud Storage systems and Cloud security, the risks involved, its impact and develop cloud application.

CO6: Broadly educate to know the impact of engineering on legal and societal issues involved in addressing the security issues of cloud computing.

17. B.SC MATHEMATICS COURSE OUTCOMES:

Course Title: Allied Mathematics - I

- CO1:** Demonstrate knowledge in computing solutions to Summation series involving Binomial, Exponential and Logarithmic Series.
- CO2:** Compute the eigen values and eigen vectors of a given matrix and apply Cayley Hamilton theorem in computing the integrals powers and also the inverse of a given matrix.
- CO3:** Knowledge in solving polynomial equations including reciprocal equations and application of Newton's method in finding approximate roots to the polynomial equations.
- CO4:** Compute radius of curvature using Cartesian co-ordinates and also evaluate maxima and minima of functions involving two variables.
- CO5:** Demonstrate skill in the expansion of Trigonometric functions and compute solutions to problems involving Hyperbolic and Inverse hyperbolic functions.

Course Title: Allied Mathematics - Ii

- CO1:** Demonstrate skill in computing integrations containing an integer parameter.
- CO2:** Identify the concept of difference tables and use them in computing problems involving Newton and Lagrange formulae.
- CO3:** Knowledge in solving second order differential equations involving constant coefficients.
- CO4:** Skill in computing solutions to partial differential equations of different types.
- CO5:** Identify the basics of Laplace transformation and apply different properties in computing problems.
- CO6:** Evaluate solution of differential equations using Laplace transformation and it's inverse.

Course Title: Operation Research

- CO1:** Identify and develop operation research models from the verbal description of the real system. Formulate the Linear Programming Problem , Evaluate the LPP using Graphical Method
- CO2:** Computing the LPP using Big-M method,Two Phase Method,Duality.

Conversion of Primal to Dual Problem.

- CO3:** Develop a report that describes the model and solving transportation, assignment problems using different techniques.
- CO4:** Demonstrate the method of sequencing problem by n jobs through 2 machines, n jobs through 3 machines
- CO5:** Use CPM and PERT techniques to plan, schedule and control project techniques.

Course Title: Statistical Methods and Their Applications

- CO1:** Create the Diagrammatic and graphical representation of data using Simple bar diagram, Multiple bar diagram, sub-divided bar diagram, Deviation bar diagram, Histogram and Pie diagram . calculate the measures of location and measures of dispersion for different types of data
- CO2:** Convert real-world problems into probability models. Discuss the concepts of probability, conditional probability and Baye's theorem and its applications
- CO3:** Evaluate correlation between two variables and identify its types.
Formulate the simple linear regression equation for a set of data.
- CO4:** Discuss the test of significance based on t, chi-square and F distributions with respect to mean and variance.
- CO5:** Prepare ANOVA table. . Designs of experiments carry them out and analyze the data they yield.

Course Title: Business Maths & Statistics

- CO1:** Analyze the relationship between ratio and proportion and to identify the arithmetic progression & geometric progression series and summation of numerical problem and able to solve them.
- CO2:** Use the assessment of bill to count the discount of bills and to identify , analyze the annual changes of annuities using annuity certain, annuity due, immediate annuity, annuity contingent, perpetual annuity for the present value.
- CO3:** Evaluate measure of central tendency for mean, median, mode and to measure the dispersion like mean deviation, quartile deviation and standard deviation.
- CO4:** Compare two variables using correlation and regression lines.

CO5: Discuss various component of time series and compute the trend values for secular and seasonal variation.

CO6: Analyze various method of finding index numbers for weighted and un weighted data.

Course Title: Business Maths & Operations Research

CO1: Identify the elements of a given set and use the representation of a given set to distinguish membership properties of elements, subsets, operations on sets and relations, functions of sets.

CO2: Able to find all possible ways of doing something using permutation, combination and to evaluate the distribution like binomial and exponential series.

CO3: Identify and develop operational research models to apply the LPP to solve real life situation using graphical method and simplex method.

CO4: Use basic ideas of transportation problems and apply to solve some problems and plan the assigning of work to different people.

CO5: Use CPM & PERT techniques to plan, schedule and control project techniques and also use to Complete the project through the network and finding critical path and project duration.

Course Title: Business Mathematics

CO1: Analysis and application of set theory through operators and functions

CO2: Identify and utilize Binominal Theorem, Exponential and Logarithmic Series

CO3: Assess limits and continuity. Differentiate polynomial equations. Locally maximize and minimize functions and apply them to cost, revenue and profit functions.

CO4: Identify and evaluate equations through ratios and proportions. Compute possible outcomes through permutations and combinations and its application on real life scenarios.

CO5: Compute basic interests on financial instruments such as bills, loans, savings and annuity. Solve for variables multi-variable equations with matrices.

Course Title: Business Statistics and Operations Research

CO1: Identify and compute measures of central tendency of sample visually mean, median and mode and verify empirical relation. Computation measures of dispersion of samples and their coefficients and Infer meaning there hence.

- CO2:** Identify and compute rank-correlation with correction of repeated ranks. Compute regression equations and estimate value of independent variable and compute correlation coefficient. Testing hypothesis through F chi square test.
- CO3:** Analysis of Time Series and indices, measurement of trends and perform statistical quality control
- CO4:** Compute linear programs through graphical and simplex methods
- CO5:** Compute transportation and assignment problems

Course Title: Business Statistics & Operations Research – I

- CO1:** Create the Diagrammatic and graphical representation of data using Simple bar diagram, Multiple bar diagram, sub-divided bar diagram, Deviation bar diagram, Histogram and Pie diagram
- CO2:** Evaluate the Measures of Central tendency – Mean, median and mode for the given data.
- CO3:** Find the measure of Dispersion - Range, Quartile Deviation, Mean Deviation , Standard Deviation – Measures of Skewness for various types of data.
- CO4:** Compute the Correlation – Karl Pearson’s Coefficient of Correlation – Spearman’s Rank Correlation for the given data and Find the Regression Lines and Coefficients for the given data.
- CO5:** Outline Operation Research and Formulate the Linear Programming –Formulation - Graphical and Algebraic Solution.
- CO6:** Discuss Network Analysis using PERT and CPM.

Course Title: Business Statistics & Operations Research - II

- CO1:** Discuss about the Time Series Analysis using Secular trend: Graphic or free hand method, Method of semi average, Moving average and
- CO2:** Explain Method of least squares to fit a straight line-Seasonal variation: Method of simple average.
- CO3:** Outline Index Numbers: Simple aggregative, simple average of price relative method, weighted average of price relative method and weighted aggregative method – Fixed and Chain base Index – Cost of Living Index.
- CO4:** Discuss about Sampling Techniques,Types of Sample and Sampling procedures – Explain Tests of Significance – t, Chi –square test.

- CO5:** Formulate LPP to Assignment Problem, and Find the solution of Minimization, Maximization case in assignment problem, unbalanced assignment problem by Hungarian method.
- CO6:** Formulate LPP to Transportation problem, Evaluate the initial solution using North west corner method, Least cost method and Vogle's Approximation method.
- CO7:** Compute the optimal solution for the given Transportation problem using MODI method

Course Title: Allied Mathematics

- CO1:** Compute the eigen values and eigen vectors. Apply Cayley Hamilton theorem
- CO2:** Solve the Polynomial equations, Reciprocal equations and approximations by Newton's method numerically
- CO3:** Solve Algebraic equations numerically by Gauss seidel and Gauss Jordan methods
- CO4:** Find the inverse of the matrix using Gauss Elimination method
- CO5:** Evaluate the positive roots of an equation using bisection, False Position and Newton Raphson method.
- CO6:** Evaluate the integrals numerically by Trapezoidal, Simpson's 1/3 and 3/8 rule and Weddle's rule

Course Title: Operations Research

- CO1:** Introduce to LPP, Solve LPP by Graphical and simplex method
- CO2:** Formulate LPP to Transportation problem, Find initial solution using North west corner method, Least cost method and Vogle's Approximation method. Find optimal solution using MODI method
- CO3:** Formulate LPP to Assignment Problem, Solve by Hungarian method
- CO4:** Demonstrate Sequencing Problem and solve n-jobs through 2,3,m machines
- CO5:** Solve two person zero sum games by Minimax principle, Dominance property.
- CO6:** Solve $2 \times m$ and $m \times 2$ games by graphical method
- CO7:** Draw Networks and discuss the critical path by Floats and PERT techniques

Course Title: Allied Statistics-I

- CO1:** Discuss Sampling and types of datas
- CO2:** Create graphs and diagrams for different types of datas
- CO3:** Evaluate measures of central value for different types of data.

CO4: Compute Measures of Dispersion like Mean deviation, quartile deviation and standard deviation for different types of data.

CO5: Compare and study the relationship of two variables using correlation and regression lines

CO6: Analyse various methods of finding index numbers for weighted and unweighted variables over two different periods.

Course Title: Allied Statistics-II

CO1: Discuss various components of time series. Compute the trend values for secular and seasonal variations.

CO2: Discuss probability, apply Baye's theorem to problems. Evaluate expectations.

CO3: Identify the different types of probability distributions, use them to solve real life problems.

CO4: Explain test of hypothesis, its significance and various types of statistical tests for one and two samples, uses.

CO5: Test of hypothesis for more than 2 samples using ANOVA

18. B.SC PHYSICS

PROGRAM SPECIFIC OUTCOME:

PSO1: The study of matter and its motion and behaviour through space and time, along with related concept.

PSO2: The programme tests the validity of Physical theories in a Scientific Method.

PSO3: Using a methodical approach to compare the implications of a theory with the conclusions drawn from its related experiments.

PSO4: Observations are used to test the validity of a theory in a logical, unbiased, and repeatable way.

PSO5: Numerical methods and mathematical approach involved in physics leading to research

B.SC PHYSICS COURSE OUTCOMES:

Course Title: Mechanics And Properties Of Matter

CO1: Understanding the basic mechanism behind collisions and material properties.

CO2: Strength of materials are analysed in terms of their size and shape.

CO3: Detailed fluid dynamics gives the fundamental knowledge over many practical applications

Course Title: Thermal Physics And Acoustics

CO1: Detailed learning of Heat, different measurement techniques in thermometry, laws of thermodynamics and heat engines.

CO2: Transmission of heat through different media.

CO3: Basic oscillatory motion and measurement of intensity of sound - Acoustics of buildings.

Course Title: Optics and Spectroscopy

CO1: Detailed study of Geometrical and Physical aspects of light.

CO2: Covers defects associated with the lens and correcting methods

CO3: Basic understanding of UV-IR spectroscopic analysis

Course Title: Electricity and Magnetism

CO1: Glimpse of Electrolysis and thermoelectricity

CO2: DC and AC analysis on different components like resistors and reactors(Inductor and Capacitor)

CO3: Basic properties of ferro magnetic substances and earth's magnetic field

Course Title: Atomic Physics

CO1: Measurement of specific charge of electron by different methods

CO2: Complete study of atomic structure and emission of spectral lines

CO3: A detailed learning of "Photon to Electron" and "Electron to Photon" through Photo electric effect and X rays

Course Title: Nuclear Physics And Particle Physics

CO1: Detailed learning of Nucleus with their empirical models

CO2: Overall view of Nuclear reactions and nuclear reactors with radioactive laws and radiation measuring techniques

CO3: Introduction of elementary particles and their conservation laws

Course Title: Solid State Physics And Electronics

CO1: Detailed learning of Crystal structure and associated defects.

CO2: Complete study of Dielectrics and Semiconductors

CO3: Understanding of Semiconductor devices and their applications

Course Title: Electromagnetism

CO1: Detailed learning of Magnetic effects of current and basic measuring device BG

CO2: Complete study of electromagnetic induction and its applications on electromagnetic machines

CO3: Introduction to electromagnetic theory

Course Title: Numerical Methods

CO1: To learn the methodology involved in computer computations.

CO2: To learn solving of simultaneous equations using matrix method and curve fitting

CO3: To find the solution of an algebraic, transcendental and differential equations.

Course Title: Relativity And Quantum Mechanics

CO1: Understand the space - time concept through relativity

CO2: Arrive at duality through matter waves

CO3: Derive time dependent and independent Schrodinger equations

CO4: Use different operators in solving quantum mechanical problems

CO5: Find eigen values and eigen functions of free particle

Course Title: Mathematical Methods In Physics

CO1: To use advanced mathematical methods and theories on various mathematical and physics problems.

CO2: To develop the skill of problem solving ability.

CO3: Use Matrices to solve simultaneous equations

CO4: Solve quantum mechanical problems using special functions and polynomials.

CO5: Have the knowledge on Fundamental Classical mechanics and statistical mechanics for their higher studies

CO6: Formulate the Lagrangian and Hamiltonian equations for simple mechanical systems

Course Title: Integrated Electronics

CO1: Through knowledge on different number systems

CO2: The skill to simplify the logics using Karnaugh map and Boolean algebra

CO3: Detailed knowledge in storing and retrieving a data through mux and demux

CO4: The skill to customize the counters to the need through serial and parallel counters

CO5: The ability to solve simultaneous equations and differential using Operational amplifier

CO6: The Understanding of digital to analog (DAC) and analog to digital (ADC)

Course Title: Microprocessor 8085 and Microcontroller 8051

CO1: Describe the functions of each pin and internal hardware of 8085 microprocessor

CO2: Write simple programs with different logics for specific tasks

CO3: Develop the knowledge of interfacing peripheral devices to 8085 microprocessor

CO4: Distinguish the software of personal computers from 8085 microprocessor

CO5: Appreciate the use of interrupts and switching of program sequence to discharge specific tasks

CO6: Explain the use of microcontrollers in the day to day applications

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- CO6:** Explain the use of microcontrollers in the day to day applications

19. B.SC PLANT BIOLOGY AND PLANT BIOTECHNOLOGY

PROGRAM SPECIFIC OUTCOMES:

- PSO1:** Demonstrate an understanding of biology at the level of molecules, cells, systems, organisms and ecosystems
- PSO2:** Demonstrate an understanding of key concepts in evolutionary biology, Plant ecology, Plant Anatomy, Plant Taxonomy, cell biology, molecular biology, biochemistry, Plant genetics, Plant Physiology, Economic botany, Plant Embryology

- PSO3:** Demonstrate scientific quantitative skills, such as the ability to evaluate experimental design through statistical analysis, read graphs, and understand and use information from scientific papers
- PSO4:** Demonstrate skill in communication of scientific data in standard format, the knowledge of plant sciences is essential for development and management of forests, parks, waste lands, sea wealth
- PSO5:** To discuss the diversity and other scientific fields like plant explorer, conservationist, ecologist, environment consultant, horticulturist, plant Physiologist, nursery manager, genetics, molecular biologist, taxonomist, plant pathologist, and farming consultant.
- PSO6:** Formulate chemical composition from medicinal plants for health problems, disorders and disease of human beings and estimate the phytochemical content of plants which meet the specified needs to appropriate consideration for the public health
- PSO7:** Gain Knowledge to use the evidence based comparative botany approach to explain the evolution of organism and understand the genetic diversity on the earth.

B.SC PLANT BIOLOGY AND PLANT BIOTECHNOLOGY COURSE OUTCOMES:

Course Title: Algae & Bryophytes

- CO1:** To explain and identify the basic concepts and life cycle patterns of Algae and Bryophytes
- CO2:** Discuss the significances of Algae and Bryophytes in this changing world for future generation.
- CO3:** Explain the evidence supporting the evolution of plants from Algae and to acquire knowledge on the morphological and anatomical structure of Bryophytes.
- CO4:** Explain the morphological diversity of Bryophytes and to understand the economic importance of the Bryophytes.
- CO5:** Familiarise the databases and online resources available for Algae and Bryophytes

Course Title: Fungi, Plant Pathology and Lichenology

- CO1:** Describe the general characteristics of Fungi and Algae and its ultrastructure. Identify advantages and disadvantages of these organisms.
- CO2:** Discuss the Biodiversity, Morphological diversity and economic importance of Fungi
- CO3:** Explain the prevention and control measures of plant diseases and its effect in agriculture

CO4: Examine the plant diseases and its pathogens for crop management in agriculture

CO5: Evaluate the ecological significances of lichens and to gain knowledge on Fruticose lichens

Course Title: Algae and Bryophytes Practical

CO1: Outline the classification of Algae and Bryophytes upto order

CO2: Discuss the biological significance of the given specimen

CO3: Identify the morphology and anatomy of Algae and Bryophytes

CO4: Investigate their significance and relate structure and function, draw and label diagrams of the specimen

CO5: Compare the cellular drawing

CO6: Identify and familiarize the specimens during field visit

Course Title: Fungi, Plant Pathology and Lichenology Practical

CO1: Outline the classification of the specimen upto order

CO2: Discuss the biological significance of the given specimen.

CO3: Identify the morphology and anatomy of Fungi through dissection

CO4: Investigate their significance and relate structure and function, draw and label diagrams of the specimen

CO5: Identify the Plant diseases, sign and symptoms of pathogens and disease, integrated methods of disease management, use of biological and chemicals in disease management.

CO6: Identify and familiarize the Plant disease, their causative agent during field visit

Course Title: NME - Nursery and Landscaping

CO1: Explain the principles of vegetative propagation.

CO2: Relate theoretical and practical knowledge to establish home gardens scientifically.

CO3: List and categorize types of soils, chemicals, fertilizers, and Integrated Pest Management.

CO4: Outline a fundamental understanding of plant identification, selection, use, and maintenance of plant material best suited for conventional and sustainable landscapes.

CO5: Relate and familiarize with grafting, layering and seedling culture

Course Title: NME – Mushroom Cultivation

CO1: Explain cultivation of different types of edible Mushrooms

CO2: Assess Climatic requirement for Mushroom cultivation

CO3: Complete the requirement of composting for Mushroom cultivation & different methods of composting

CO4: Examine the diseases affecting the Mushrooms and develop their control measures. Expertise in harvesting methods of Mushrooms for cultivation

CO5: Describe the grading, packing and storing methods of Mushrooms and to know about preparation of its value added products

Course Title: Anatomy, Microtechnique and Embryology of Angiosperms

CO1: Discuss the classification of tissues on the basis of structure and function and to gain knowledge in the Primary and secondary anatomical characters and development of Root, Stem, Leaf (Dicot and Monocot).

CO2: Compare the structural differences among different taxa of vascular plants.

CO3: Explain the techniques of microscopic slides making, microscopic measurements and methods of identification of some organic compounds in plant cells.

CO4: Explain the making of temporary microscopic slides, using different cutting techniques and permanent microscopic slides using paraffin method.

CO5: To Prepare large plant Material through Dry, Wet, and Pressing method detect the presence of different groups of organic compounds in plant

CO6: Outline on double fertilization and their significance and to know about the Structure and development of dicot and monocot embryos.

Course Title: Pteridophytes, Gymnosperms & Paleobotany

CO1: To describe the morphological, reproductive and anatomical structure of Pteridophytes and Gymnosperms.

CO2: Outline the salient features of stellar evolution and relate the latest trends in classification, vegetative morphology and reproductive biology of Gymnosperms.

CO3: Describe the features and reproductive adaptations of conifers and other gymnosperms.

CO4: To explain about fossils and fossilization and to understand about geological time scale.

CO5: After getting through this paleobotany, students would be able to know about Palynology, its branches and their importance, they would be able to isolate Palynomorphs from Sedimentary Rock samples through different maceration techniques.

Course Title: Pteridophytes, Gymnosperms & Paleobotany- Practical

CO1: To Identify the Pteridophytes morphology and anatomy of both vegetative and reproductive parts through dissection

CO2: To Identify the Gymnosperm morphology and anatomy of both vegetative and reproductive parts through dissection

CO3: To Identify the fossil genera of Pteridophytes and Gymnosperms

CO4: To Predict the types of fossilization of plants

CO5: To Identify and familiarize the lower vascular Plants distributed in any ecosystem

Course Title: Anatomy, Microtechnique and Embryology of Angiosperms Practical

CO1: Identify meristems , tissues , stem, root through permanent slides and photographs.

CO2: Identify the Structure and development of dicot and monocot embryos through dissection.

CO3: Examine the steps involved in Smear/Squash Method and from Prepared Slides.

CO4: Identify the ovule types and developmental stages of embryo sac using permanent slides

CO5: Identify the Types of endosperm and seed dispersal mechanisms by specimen

Course Title: Morphology, Taxonomy of Angiosperm & Economic Botany

CO1: Describe the major groups of vascular plants and their phylogenetic relationships.

CO2: List the basic principles involved in classification, naming and identification of angiospermic plants.

CO3: To Find the unknown plants to species level with help of Taxonomical tools such as Keys and Monographs

CO4: Describe morphological and floral characters in technical terms of given Families.

CO5: To recognize the diverse aspects of human cultural endeavors to plant resources, and to gain a better understanding and perspective of the origins, histories, and roles of important plants and plant products to the development of human culture

Course Title: Cell Biology, Molecular Biology and Evolution

CO1: Describe the level of molecules, cells, systems, organisms and ecosystems

- CO2:** Explain structure and function of cell and cell organelles, using Compound Microscope and elucidation of Ultra structure from Electron Microphotographs and to learn the measurement of Cell Size
- CO3:** Compare the organization of prokaryotic and eukaryotic cell, structure and function of cell organelles including cell division.
- CO4:** Discuss the molecular mechanisms by which DNA controls development, growth or morphological characteristics of organisms and relate gene regulation
- CO5:** Define Geological Time Scale and describe phytogeographical Realms
- CO6:** Describe the Theory of Evolution considering Darwinism and Modern Synthetic Theory

Course Title: Microbiology

- CO1:** To describe diversity of microorganisms, bacterial cell structure and function, microbial growth and metabolism, and the ways to control their growth by physical and chemical means
- CO2:** Explain the practical skills in fundamental microbiological techniques and to gain knowledge on microbial growth and sterilization techniques
- CO3:** Classify and apply the scientific method of investigation and hypothesis testing and perform inoculating bacteria with different cultivation technique
- CO4:** Investigate the role of microorganisms in production of industrial enzymes, antibiotics, biopolymer
- CO5:** To explain the basic genetic systems of bacteria, bacteriophage and plasmids
- CO6:** Explain the role of microorganisms in food production and preservation, and their ability to cause food-borne infections

Course Title: Plant Ecology, Phytogeography and Remote sensing

- CO1:** Discuss the morphological and anatomical adaptations of hydrophytes, mesophytes and xerophytes .
- CO2:** Explain interactions of various environmental factors .Describe ecological succession – causes, process and types of succession
- CO3:** Explain biodiversity – threat, cause and conservation of biodiversity (In-situ and Ex – situ) Field visit to familiarize students with ecology of different sites.
- CO4:** Describe pollution, types, causes symptoms and remedial measures and to describe the phytogeographical region of India.

CO5: Compare the natural patterns and relationships between plants and their environment by organizing groups of plant species into functional vegetation categories.

CO6: Find the role of remote sensing in Forest Management.

Course Title: Morphology, Taxonomy of Angiosperm & Economic Botany, Cell Biology, Molecular Biology & Evolution, Microbiology, Plant Ecology & Phytogeography Practical

CO1: Identify the anatomical feature of root, stem and leaf in addition to variation or anomalies. To provide knowledge on the structure of anther and ovule

CO2: Identify observe and sketching the floral parts of the plants belonging to different families.

CO3: To Find the Economic uses of plants and plant parts.

CO4: Explain the steps involved in Smear/Squash Method and from Prepared Slides.

CO5: Identify and familiarize the specimens during field visit

CO6: Describe the Theory of Evolution considering Darwinism and Modern Synthetic Theory, evolutionary scientists and Geological time scale

CO7: Demonstrate the process in remote Sensing, types of satellite mapping and vegetation mapping.

Course Title: Horticulture & Mushroom Cultivation

CO1: Explain the Nursery management and plant propagation

CO2: To list the horticultural practices and activities of large scale plant production.

CO3: Explain horticultural skills and knowledge to operate various business entities found in the horticultural industry

CO4: List a fundamental understanding of landscape construction, irrigation design and constructing conventional and sustainable landscapes

CO5: List the requirement of composting for Mushroom cultivation & different methods of composting

CO6: Determine the most important species of mushrooms and knows the basic ways of the cultivation of each of them

Course Title: Genetics, Plant Breeding & Biostatistics

- CO1:** To Compare the classical Mendelian genetics, modified Mendelian theories like allelic and gene interactions including epistasis, complementary genes, multiple alleles, quantitative inheritance.
- CO2:** Explain the mechanism of linkage and crossing over, chromosome mapping, sex determination in various organisms, sex linked inheritance, nuclear inheritance, population genetics
- CO3:** Outline different breeding techniques and the application of modern amenities for the process like the use of genetic engineering, mutation breeding, heterosis breeding and breeding for resistance
- CO4:** Find the plant adaptation that are applicable to agricultural and natural systems.
- CO5:** Recognize the importance of data collection and its role in determining scope of inference.

Course Title: Plant Physiology & Biochemistry

- CO1:** Describe the characteristic features of water which helps in the biological systems, transpiration types, features and mechanisms.
- CO2:** Explain the processes related to the ascent of sap, uptake of nutrients and translocation of sugars.
- CO3:** Examine photosynthesis- (apparatus, process, regulation and assimilatory powers), Nitrogen fixation- (sites, genetic control and assimilation)
- CO4:** List the role of phytohormones in plant growth, development, movement (types and feature), photomorphogenesis, seed germination and seed dormancy.
- CO5:** Explain the plant metabolic reactions, components and functioning of Plant chemicals.

Course Title: Plant Biotechnology

- CO1:** Describe the isolation and cultivation of economically important microbes plant cells.
- CO2:** Explain tissue culture methods and study the suitable culture media and its composition.
- CO3:** Relate the mechanisms of plant cell signaling and gene regulation.
- CO4:** Discuss the different methods for transformation of plants or plant cells, including their specific advantages and applications.
- CO5:** Relate plant biotechnology applications within forestry, agriculture, and production of bio products , in pharmaceuticals, tanneries, dairy and bio-fuels

CO6: Demonstrate the role of transgenic plant in bioprospecting

Course Title: Herbal Botany

CO1: Explain method for identification and authentication of herbal drugs

CO2: Explain basic principles of traditional medicinal systems with method of preparation and standardization of Ayurvedic, Siddha, Unani formulations

CO3: Describe benefits of various plants as nutraceuticals in ailments and also the herb-food interaction of various plant drugs

CO4: Describe about herbs or natural origin drugs as raw materials for preparation of cosmetics, excipients, conventional herbal formulation and novel dosage forms like phytosomes

CO5: Explain methods for selection, processing of herbal drugs as raw materials for herbal drug preparation

CO6: Compare and contrast the standardization and quality control methods of herbal drugs preparation

Course Title: Genetics, Plant Breeding & Biostatistics, Plant Physiology & Biochemistry, Plant Biotechnology Practical

CO1: Discuss the basic principles of genetics, Law of Mendel, Gene interaction, Allelic and non-allelic genes.

CO2: List Genetic Problems related to Transmission and Distribution of Genetic Material.

CO3: Describe linkage and crossing over of genes, solving gene mapping problems. Identification of DNA in Plant Material

CO4: Construct a histogram, pie chart and line diagram of plants within the plants.

CO5: Describe more about the characteristics, techniques, principles and application of plant tissue culture

CO6: Explain the main techniques of in vitro culture of plant cells & tissues.

CO7: Discuss the application of vital and physical forces theories on plant physiology most preferably ascent of sap, transpiration, mineral nutrition in plants and phloem transport

CO8: Identify Glucose and Protein Estimation

CO9: Find the methods used for the bio-production of plant secondary metabolites.

Course Title: Preservation of Fruits and Vegetables

- CO1:** To acquaint with properties and role of various constituents in foods, interaction and changes during processing.
- CO2:** Discuss the proper handling technologies of fruits and vegetables to reduce post-harvest losses
- CO3:** List the principles and methods of preservation of fruits and vegetables into various products
- CO4:** To acquaint with principles of different techniques used in processing and preservation of foods
- CO5:** Explain the essentials of Intellectual Property Rights, nutritional security, standard protocol for food quality parameters and control systems, food standards, regulations, specifications.

Course Title: Allied Botany – I

- CO1:** Explain the structure and reproduction of certain Cryptogams and Gymnosperms
- CO2:** Relate the organization of prokaryotic and eukaryotic cell, structure and function of organelles and cell division.
- CO3:** Explain the plant cell, tissues, and internal structures of stem, root and leaves.
- CO4:** Comparative study of the different plant groups with representative examples including Virus, Bacteria, Algae, Fungi, Lichens, Bryophytes, Pteridophytes and Gymnosperms
- CO5:** Demonstrate the simple tissues from fresh plant material and prepare permanent slides. Study of simple and complex tissues (xylem)

Course Title: Allied Botany – II

- CO1:** Describe the major groups of vascular plants and their phylogenetic relationships. Understand the basic principles involved in classification, naming and identification of Angiosperms
- CO2:** Explain photosynthesis - (apparatus, process, regulation and assimilatory powers), Nitrogen fixation (sites, genetic control and assimilation)
- CO3:** Explain interactions of various environmental factors. Describe ecological succession – causes, process and types of succession
- CO4:** Explain the embryo types and anatomy of the embryo and structure of ovule

CO5: Discuss about the characteristics, techniques, principles and application of plant tissue culture

Course Title: Allied Botany – I & II Practical

CO1: Identify the morphology and anatomy of Algae, Fungi and Bryophytes and to investigate their significance and relate structure and function, draw and label diagrams of the specimen

CO2: To Identify the Pteridophytes morphology and anatomy of both vegetative and reproductive parts through dissection

CO3: To Identify the Gymnosperm morphology and anatomy of both vegetative and reproductive parts through dissection

CO4: Identify meristems , tissues , stem, root through permanent slides and photographs.

CO5: Identify the Structure and development of dicot and monocot embryos through dissection.

CO6: Identify observe and sketching the floral parts of the plants belonging to different families.

CO7: Discuss the application of vital and physical forces theories on plant physiology most preferably ascent of sap, transpiration, mineral nutrition in plants and phloem transport through experiment

20. B.SC VISUAL COMMUNICATION

PROGRAM SPECIFIC OUTCOMES:

PSO1: Obtain a significant knowledge on fundamental and advanced aspects of Visual Communication.

PSO2: Gain in-depth knowledge on pre-production, production and post-production process in Film Making.

PSO3: Gain proficiency in studio techniques such as photography, audiography and videography.

PSO4: Grasp the fundamental concepts of Documentary Film Making.

PSO5: Gain insight into the various aspects of script writing, direction and editing.

PSO6: Assimilate technical skills on photography, cinematography, audio editing and video Editing, 2D &3D Animation and Dubbing.

B.SC VISUAL COMMUNICATION COURSE OUTCOMES:

- CO1:** Students will be able to understand the various formats of Visual Communication
- CO2:** Students will be able to co relate various visual formats with communication through visual means
- CO3:** Students will be able to explain basic concepts of no verbal communication. Digital arts and designs, moving and still images, web based communication etc.
- CO4:** Students will be able to understand the significance of visual communication in relation to human and society.

Course Title: Visual Art

- CO1:** Have a very good knowledge of basics of drawing and material handling and understanding.
- CO2:** Understand the light and dark and transition of the total value.
- CO3:** Understand the usage of positive and negative space in a design composition.
- CO4:** Gaining the composing knowledge of landscape and cityscape drawing and painting.
- CO5:** Understand the face and human feature and its measurements.

Course Title: Basic Photography

- CO1:** Understand the key role of photography for Communication and also about the characteristics of Light and its principles.
- CO2:** Acquire the significant knowledge about the internal elements and various functions of different types of camera.
- CO3:** Assess the external elements that support for taking better photographs.
- CO4:** Get the basic understandings about the Digital exposing, lights and modifiers.
- CO5:** Acquire an in-depth knowledge about the exposure, depth-of-field and composition.
- CO6:** Know the importance of Photo Journalism and about its various fields.

Course Title: Visual Literacy

- CO1:** Know about the importance of art and design knowledge.
- CO2:** Acquire the knowledge about how the Media industry requirement and manage skills accordingly.
- CO3:** Understand the real/pseudo reality in the media on all aspects.

CO4: Understand about the Media Audience and about the importance of alignment and segmentation.

CO5: Acquire an in-depth knowledge about the culture, sub-culture and culture and practice in current scenario

Course Title: Elements of Film Studies

CO1: Students will have critical understanding of the technological and creative processes involved in the writing and production of film works of all types.

CO2: Students will demonstrate that the critical study of cinema inform their filmmaking and that the study and practice of film production enhance their work as film scholars and analysts.

CO3: Students will be able to conduct film research and compose cogent, persuasive, and valid essays about film.

CO4: To begin developing a historical appreciation of film based on a survey of cinematic traditions contained within narrative, documentary, and experimental forms for each student.

CO5: To examine some of the major methodological issues in film production

Course Title: Visual Graphics

CO1: Photoshop is a powerful and popular image editing software that helps you to apply various effects easily and get consistent results

CO2: It has many features that are hardly available in other photo editing software

CO3: Logo Designing, creative art, blog images and for many other things professionally.CO

CO4: Web banner is a leading business.

CO5: Photo restoration is used for rebuild the old photos

CO6: Boucher, poster & multimedia presentation development

CO7: 3d texture development, Story board development

Course Title: Visual Design

CO1: gain knowledge about graphic design - its history and evolution along with its technology, and concepts.

CO2: have a very good knowledge about Principles of Graphic Design.

CO3: understand the relationship of graphic design to other disciplines and to society.

CO4: have a thorough knowledge of creating pattern design.

CO5: have detailed understanding of Typography through principle for typography

Course Title: Media Culture and Society

CO1: Understand the Media culture and the functions of media on individual.

CO2: Cultural approach and studies of culture film, television, Music.

CO3: Understand the Rural and urban culture aspects and the changes happened in Society because of media.

CO4: Role of Media in terms of changes brings in the society.

CO5: Effects on social media and the technology changes in the present scenario Which was happened is analysed by the students.

Course Title: Television Production Theory

CO1: Raising of Professional standards in Television Production.

CO2: Creating awareness about responsive and responsible in TV Production.

CO3: Continuing review of professional codes and ethics set by the professional and regulatory bodies for Television training.

CO4: Emphasising the need for raising the standards for Television production.

CO5: Understand the ability to effectively apply oral presentation techniques in various communication settings in Television Production.

CO6: Solutions to production problems using the major theories and concepts in their respective disciplines

CO7: Demonstrating proficiency in using the current and evolving hardware and software applications

Course Title: Digital Advertising

CO1: Understand the nature and scope of Advertising.

CO2: Plan and implement creative strategy, media strategy, and budgeting.

CO3: Know the latest trends in advertising.

CO4: Gain knowledge in Audio-visual commercials.

CO5: Perceiving Visualization process.

Course Title: Script Writing (Practical)

- CO1:** Express ideas fluently in standard screenwriting format at an advanced level.
- CO2:** Craft character-based stories with clear conflicts at an advanced level.
- CO3:** Analyse film and television structure at an advanced level.
- CO4:** Workshop creative ideas at an advanced level.
- CO5:** Students will complete full-length scripts that are geared toward a specific budget (whether
- CO6:** Hollywood studio fare, student films, (or anywhere in between).

Course Title: Photography

- CO1:** gain knowledge about handle the camera to shoot Landscape, Monumental Photography and Seascape photography
- CO2:** gain knowledge about handle the camera to shoot photo Journalism, Photo Feature like any Social issues
- CO3:** gain knowledge about handle the camera to shoot Fashion Photography, Product photography, Industrial photography, Event Photography
- CO4:** gain knowledge about handle the camera to shoot Portray Humans and Monuments
- CO5:** gain knowledge about handle the camera to shoot Silhouette Photography, Special Effects, Freezing Movement Photography, Panorama

Course Title: Visual Text Analysis

- CO1:** Understand the basic concepts on basic visual text and also the media organization in technical, ownership production.
- CO2:** Understand about the signs and how it works in media as a main element in communication.
- CO3:** Understand the term psychoanalysis and also the three stages of it and how directors use the term in films in different aspects.
- CO4:** Political analysis of media will be learnt by them and the approach which was used before centuries for propaganda purpose.
- CO5:** Understand the Practical application visual text analysis and its criticism.

Course Title: Audio Production Practical

- CO1:** Understanding the role of sound in Television and Films

- CO2:** Exploring the tools for sound recording and designing.
- CO3:** Explore the selecting of proper equipment to achieve creative objectives.
- CO4:** Building a foundation for managing the complex audio requirements of Field and Studio Production.
- CO5:** Understanding the various process of laying sound tracks for films step by step.

Course Title: Multimedia

- CO1:** 3D Architectural rendering
- CO2:** Exterior, 3D Interior and 3D Architectural development
- CO3:** Design 3D Mechanical modelling
- CO4:** 3D models and it has great compatibility
- CO5:** 3D computer graphics program for making 3D animations, models, games and images
- CO6:** 3D Max has great conceptual modelling tools, large-scale environment creation
- CO7:** 3D Max is used more for games while Maya is used for film work

Course Title: Media Ethics and Law

- CO1:** Students will be able to understand the contribution of media towards society.
- CO2:** Students will be able to uphold the values of Media and take its message forward.
- CO3:** Students will be able to understand the laws that govern Media Industry.
- CO4:** Students will be able to understand what is Media Ethics and Responsibilities.
- CO5:** Students will be able to understand the operational part of the Laws that regulate the Media industry.

Course Title: Television Production (Practical)

- CO1:** Acquire technical knowledge needed for audio visual content production
- CO2:** Be able to run the work flow of shooting/recording, editing and broadcasting
- CO3:** Be able to work in multi-camera productions and studio environment
- CO4:** Be able to work in different stages of program production
- CO5:** Be able to identify different program and broadcast formats
- CO6:** Be able to develop and apply a program idea

Course Title: Visual Effects

- CO1:** Live Action Effects (Key light)

- CO2:** Matte Digital Animation
- CO3:** ROTO Paintings
- CO4:** Digital & Dynamic Effects (Match-Moving)
- CO5:** Advance lighting effect
- CO6:** Real time texture.
- CO7:** Ad and film industry, corporate demo development

Course Title: Understanding Film

- CO1:** Know about our Indian Film History and contemporary trends in filmmaking.
- CO2:** Acquire the significant knowledge about the various film movements.
- CO3:** Differentiate narrative and non-narrative form in films.
- CO4:** Understand the production process in detail.
- CO5:** Acquire an in-depth knowledge about the techniques involved in generating concepts, Developing it as stories and writing effective screenplay.

Course Title: Media Organization

- CO1:** acquire detailed understanding of media organizations and its types.
- CO2:** bring out the differences between media as business and media as a social institution.
- CO3:** have an in-depth knowledge of how media organizations are managed.
- CO4:** gain clear idea of how print media works, its various functions and departments.
- CO5:** have a deeper understanding of the relationship between media and its market, the production and revenue aspects, along with the risks involved with the economics of media.
- CO6:** also have a thorough knowledge of the strategies, strengths and legal arrangements of media organization.

Course Title: Advertising Photography

- CO1:** Have a very good knowledge of various camera operation light meters and film
- CO2:** Gain knowledge about – use digital camera image recording systems, memory cards
- CO3:** Have detailed understanding about- to use point light source, wide light sources, light banks, soft boxes, honeycomb, and soft lights
- CO4:** Understand the outdoor fashion and portrait lighting using Diffuser, reflector, mirror

CO5: Have a thorough knowledge basic colour principles, including line shape hue, texture relationship to composition

CO6: Gain knowledge about tools for the professional photographer advanced retouching manipulation

Course Title: Film Apperiscation

CO1: Recognize types of films, their impact on society, and their roles in our lives

CO2: Recall the concepts behind storytelling, Mize en Scène, and cinematography

CO3: Identify ways sound contributes to movies

CO4: List the roles of directors and critics in the film industry

CO5: Identify types of movie genres and various editing styles

Course Title: Internship

CO1: Giving an opportunity to explore various career possibilities in Visual communication

CO2: Acquire the significant knowledge about the techniques involved in the indoor shoot.

CO3: opportunity to learn those disciplines, skills and attitudes which can best or only be learned on the job, especially self-discipline, team work, responsibility, and initiative.

CO4: Further develops practical skills in a real-world context

CO5: Providing an opportunity to strengthen your portfolio or resume tape with practical experience and projects.

Course Title: Project

CO1: students are giving an opportunity to explore various career possibilities in their field of interest

CO2: Acquire the significant and produce an profile for them

CO3: opportunity to learn those disciplines, skills and attitudes which can best or only be learned on the job, especially self-discipline, team work, responsibility, and initiative.

CO4: Further develops practical skills in a real-world context

CO5: Providing an opportunity to strengthen your portfolio or resume tape with practical experience and projects.

CO6: The final outcome of the Programme is seen as the output of the knowledge gained for three years

21. B.C.A

PROGRAM SPECIFIC OUTCOMES:

- PS01:** BCA program courses are designed to bridge the gap between the studies of computers and its applications. The syllabus focuses on the core fundamentals of computer science, but generally undergoes revision according to the industry requirement with the aim of increasing employment opportunities for students
- PS02:** Students who opt for a [Bachelor in Computer Applications \(BCA\)](#) will get skills and information not only about Computer and Information Technology but also in communication, organization and management. One also get to learn programming languages such as Java, C++, HTML, SQL, etc. Information about various computer applications and latest developments in IT and communication systems is also provided.
- PS04:** BCA Program Course helps a Student Develop the Programming Skills, Networking Skills, Learn Application Packages, Programming Languages, Modern Techniques of IT.
- PS05:** The BCA program covers the basic and advance knowledge about different types of accounts. So they will acquire knowledge and their applications about the same.
- PS06:** The BCA program also covers different mathematical papers and Operations research. So the students also gain knowledge and their applications about the same.
- PS07:** The BCA program covers the hardware oriented papers like digital logic fundamentals, computer architecture, etc. This knowledge helps to student for assemble the PC.
- PS08:** It prepares the students to obtain the positions as System Analysts, Systems Designers, Programmers and IT Managers in any field related to information technology.
- PS09:** This course develop skilled manpower in the various areas of information technology like C, C++, Java (Core and Advanced), ASP .NET, Visual Basic, Web technologies, XML, JavaScript, JSP and PHP, Cloud computing.
- PS010:** The program is designed to bridge the gap between the studies of computers and its applications.

B.C.A COURSE OUTCOMES:

Course Title: Programming In C

CO 1: Understand the basic terminology used in computer programming

CO 2: Write, compile and debug programs in C language.

- CO3:** Use different data types in a computer program.
- CO4:** Design programs involving decision structures, loops and functions.
- CO5:** Explain the difference between call by value and call by reference
- CO6:** Understand the dynamics of memory by the use of pointers and Structures.
- CO7:** Use different data structures and create/update basic data files.

Course Title: C Programming Lab

- CO1:** Understand the basic concept of C Programming, and its different modules that includes conditional and looping expressions, Arrays, Strings, Functions, Pointers, Structures and File programming
- CO2:** Acquire knowledge about the basic concept of writing a program.
- CO3:** Role of constants, variables, identifiers, operators, type conversion and other building blocks of C Language.
- CO4:** Use of conditional expressions and looping statements to solve problems associated with conditions and repetitions.
- CO5:** Role of Functions involving the idea of modularity.

Course Title: Computing Skills – Practical

- CO1:** Introduction to computers covers the basics of computers, classification of computers, hardware, software and uses of computers.
- CO2:** Word processing covers, how to manipulate a text document, such as resume or a report. Creating, editing, saving and printing documents. Copying, pasting, moving and deleting text within a document. Formatting text, such as font type, bolding, underlining or italicizing.
- CO3:** The file management covers, how to manipulate a folder such as create a folder, sub folder and perform the basic operations related to windows.
- CO4:** The spreadsheet covers, to create budgets, produce graphs and charts, and for storing and sorting data and also used to forecast future performance, calculate tax, completing basic payroll, producing charts and calculating revenues.
- CO5:** The Networks covers the basics of browsing and E-mail creation, sending and receiving a message.

Course Title: Digital Logic Fundamentals & Microprocessor

- CO1:** A thorough understanding of the fundamental concepts and techniques used in digital electronics.
- CO2:** To understand and examine the structure of various number systems and its application in digital design.
- CO3:** The ability to understand, analyze and design various combinational and sequential circuits.
- CO4:** Ability to identify basic requirements for a design application and propose a cost effective solution.
- CO5:** The ability to identify and prevent various hazards and timing problems in a digital design.
- CO6:** To develop skill to build, and troubleshoot digital circuits.

Course Title: Microprocessor Lab

- CO1:** Write programs to run on 8086 microprocessor based systems.
- CO2:** Design system using memory chips and peripheral chips for 16 bit 8086 microprocessor.
- CO3:** Understand and devise techniques for faster execution of instructions, improve speed of operations and enhance performance of microprocessors.
- CO4:** You will learn a microprocessor programming model at a level that enables you to write assembly language programs for the processor meeting given specifications.
- CO5:** You will learn concepts associated with interfacing a microprocessor to memory and to I/O devices.
- CO6:** You will learn how to control components of a microprocessor based system through the use of interrupts.

Course Title: Html Lab

- CO1:** HTML is basically used for designing purposes; it is used to design webpages, interfaces for various mobile applications and web applications.
- CO2:** The HTML programs used manipulate Text such as bold, italic, superscript, subscript, size font style etc.
- CO3:** The HTML programs implement Multimedia tools like images, audio, and video,
- CO4:** The HTML programs to connect various web pages easily through various tags.

CO5: The HTML programs used connect the databases through linking tags. It also split the screen and displays various outputs.

Course Title: Data Structure & Algorithms

CO1: Demonstrate familiarity with major algorithms and data structures.

CO2: Analyze performance of algorithms and choose the appropriate data structure and algorithm design method for a specified application.

CO3: Determine which algorithm or data structure to use in different scenarios and be familiar with writing recursive methods.

CO4: Demonstrate understanding of the abstract properties of various data structures such as stacks, queues, lists, trees and graphs and Use various data structures effectively in application programs.

CO5: Demonstrate understanding of various sorting algorithms, including bubble sort, insertion sort, selection sort, heap sort and quick sort.

Course Title: Programming In C++

CO1: Gain the basic knowledge on Object Oriented concepts.

CO2: Ability to develop applications using Object Oriented Programming Concepts

CO3: To demonstrate the differences between traditional imperative design and object-oriented Design

CO4: To explain class structures as fundamental, modular building blocks

CO5: To understand the role of inheritance, polymorphism, dynamic binding and generic structures in building reusable code

CO6: To write small/medium scale C++ programs with simple graphical user interface
Understand the file handling and error handling mechanisms in C++

Course Title: Data Structures Using C++ Lab

CO1: Apply object-oriented programming features to program design and implementation

CO2: Understand object-oriented concepts and how they are supported by C++

CO3: Understand implementation issues related to object-oriented techniques.

CO4: Demonstrate the ability to analyze, use, and create functions, classes, to overload operators.

CO5: Demonstrate the ability to understand and use inheritance and Pointers when creating or using classes and create templates

CO6: Demonstrate the ability to understand and use Exception handling and file handling mechanism.

Course Title: Operations Research

CO1: Formulate a real-world problem as a mathematical programming model

CO2: Understand the theoretical workings of the simple method for linear programming and perform iterations of it by hand

CO3: Understand the relationship between a linear program and its dual, including strong duality and complementary slackness

CO4: Perform sensitivity analysis to determine the direction and magnitude of change of a model's optimal solution as the data change

CO5: Solve specialized linear programming problems like the transportation and assignment problems

CO6: Solve network models like the shortest path, minimum spanning tree, and maximum flow problems

Course Title: Financial Accounting

CO1: Understand the role of accounting and its limitations.

CO2: Prepare financial statements in accordance with Generally Accepted

Course Title: Accounting Principles.

CO1: Demonstrate knowledge of each step in the accounting cycle

CO2: Support at a basic level the recording and reporting of financial information for business

CO3: Demonstrate an understanding the tally in accounts

Course Title: Personality Enrichment

CO1: The process of self-disclosure involves many decisions, including what, when, where, and how to disclose. Students affect for the content, contribute to perceptions of instructor credibility increased.

CO2: Recognize their ethical responsibilities to their community, society, discipline, and profession based on various perspectives and associated standards of ethical communication.

CO3: Demonstrate the ability to analyze a problem and devise a solution in a group.

CO4: Demonstrate the ability to research, analyze, and reason from evidence to reach an effective conclusion or outcome.

Course Title: Java Programming

CO1: Understanding of the principles and practice of object oriented analysis and design in the construction of robust, maintainable programs which satisfy their requirements;

CO2: Ability to implement, compile, test and run Java programs comprising more than one class, to address a particular software problem.

CO3: Demonstrate the principles of object oriented programming;

CO4: Demonstrate the ability to use simple data structures like arrays in a Java program.

CO5: Understand the concept of package, interface, multithreading and File handling in java.

CO6: Ability to make use of members of classes found in the Java API (such as the Math class).

Course Title: Computer Architecture

CO1: Students will understand the sequence and execution of microinstructions.

CO2: Students will understand Input and output peripheral devices and their communication with the rest of the computer components.

CO3: Students will understand the major components of a computer including CPU, Memory, I/O and storage.

Course Title: Java Programming Lab

CO1: Understand programming language concepts, particularly Java and object-oriented concepts.

CO2: Write, debug, and document well-structured Java applications

CO3: Implement Java classes from specifications and effectively create and use objects from predefined class libraries

CO4: Understand the behavior of primitive data types, object references, and arrays

CO5: Apply decision and iteration control structures to implement algorithms

CO6: Write simple recursive algorithms

CO7: Implement interfaces, inheritance, and polymorphism as programming techniques and apply exceptions handling

Course Title: Cost and Management Accounting

CO1: Understand the cost and management accounting techniques for evaluation, analysis and application in managerial decision-making;

CO2: Compare and contrast marginal and absorption costing methods in respect of profit reporting;

CO3: Apply marginal and absorption costing approaches in job, batch and process environments.

Course Title: R Programming Lab

CO1: This course gives practical exposure to the basics of R – Programming.

CO2: To provide an overview of a new language R used for data science.

CO3: To introduce students to the R programming environment and related eco-system and thus provide them with an indemand skill-set, in both the research and business environments

CO4: To introduce the extended R ecosystem of libraries and packages

CO5: To demonstrate usage of as standard Programming Language.

CO6: To familiarize students with how various statistics like mean median etc. can be collected for data exploration in R.

Course Title: Environmental Studies

CO1: Know the importance of environmental studies and methods of conservation of natural resources.

CO2: Describe the structure and function of an ecosystem.

CO3: Identity the values and conservation of bio-diversity.

CO4: Explain the causes, effects and control measures of various types of pollutions.

CO5: Select the appropriate methods for waste management.

CO6: Get knowledge about various disaster management methods

CO7: Recall social issues and legal provision.

Course Title: Relational Database Management System

- CO1:** To analyze Data Base design methodology.
- CO2:** Acquire knowledge in fundamentals of Data Base Management System.
- CO4:** Be able to analyze the difference between traditional file system and DBMS.
- CO5:** Able to handle with different Data Base languages.
- CO6:** Draw various data models for Data Base and Write queries mathematically.

Course Title: Operating Systems

- CO1:** Understand the difference between different types of modern operating systems, virtual machines and their structure of implementation and applications.
- CO2:** Understand the difference between process & thread, issues of scheduling of userlevel processes / threads and their issues & use of locks, semaphores, monitors for synchronizing multiprogramming with multithreaded systems and implement them in multithreaded programs.
- CO3:** Gain knowledge about the concepts of deadlock in operating systems and how they can be managed / avoided and implement them in multiprogramming system.
- CO4:** Demonstrate the design and management concepts along with issues and challenges of main memory, virtual memory and file system.
- CO5:** Understand the types of I/O management, disk scheduling, protection and security problems faced by operating systems and how to minimize these problems.

Course Title: RDBMS LAB

- CO1:** Design and implement a database schema for a given problem domain.
- CO2:** Populate and query a database using SQL DDL/DML commands.
- CO3:** Program in PL/SQL including stored procedures, stored functions, cursors, packages.
- CO4:** Design and build a GUI application

Course Title: Value Education

- CO1:** Inculcate the value system in their real life scenarios.
- CO2:** Implement the role of culture and civilization, roles and responsibilities in the society.
- CO3:** Effectively follow Salient values for life such as forgiveness, ability to sacrifice, self esteem, team work and creative thinking.
- CO4:** Reflect the human rights, social values and welfare of the citizen.

CO5: Consider the relation between values and personal behavior affecting the achievement of sustainable future.

CO5: Bind man and nature to preserve the environment.

CO6: Overcome and try to evacuate social evils from the society.

Course Title: PHP Scripting Language

CO1: Use a PHP editing program.

CO2: Develop functional PHP script.

CO3: Understand the use of PHP with HTML.

CO4: Understand the ability to post and publish a PHP website.

CO5: Debug script and develop Web Applications.

Course Title: Software Engineering

CO1: Select and implement different software development process models

CO2: Extract and analyze software requirements specifications for different projects

CO3: Develop some basic level of software architecture/design

CO4: Apply standard coding practices

CO5: Define the basic concepts and importance of Software project management concepts like cost estimation, scheduling and reviewing the progress.

CO6: Identify and implement of the software metrics

CO7: Apply different testing and debugging techniques and analyzing their effectiveness

Course Title: Mini Project

CO1: Acquire knowledge about the software development stages such as analysis, design, coding ,testing and maintaining the project.

CO2: Students can able to design an effective software using various application

Course Title: Data Communication and Networking

CO1: To understand the fundamental concepts of computer networking and provide the knowledge of different protocols at different layers of models.

CO2: To understand the techniques used to share network bandwidth among the multiple users and provide the depth knowledge of DLL fundamentals.

CO3: Learn how the data is transferred between the computers over the network.

Course Title: PHP Lab

CO1: This course introduces the basic concepts of PHP Scripting Language.

CO2: To develop web applications using basic PHP elements such as delimiters, control structures, operators, variables, arrays, and functions.

CO3: To debug and improve code for better reusability and scalability.

Course Title: Elective – I: Visual Programming

CO1: Design, create, build, and debug Visual Basic applications.

CO2: Explore Visual Basic's Integrated Development Environment (IDE).

CO3: Implement syntax rules in Visual Basic programs.

CO4: Explain variables and data types used in program development.

CO5: Apply arithmetic operations for displaying numeric output.

CO6: Write and apply decision structures for determining different operations.

CO7: Write and apply loop structures to perform repetitive tasks.

CO8: Write and apply procedures, sub-procedures, and functions to create manageable code.

CO9: Create one and two-dimensional arrays for sorting, calculating, and displaying of data.

CO10: Write Visual Basic programs using object-oriented programming techniques including classes, objects, methods, instance variables, composition, and inheritance, and polymorphism. Write Windows applications using forms, controls, and events.

Course Title: UNIX Programming

CO1: Create a file

CO2: Access a file using the relative pathname

CO3: Access a file using the absolute pathname

CO4: Erase or delete a file

CO5: Copy a file

CO6: Move a file

CO7: Cut columns of data from a file

CO8: Paste / concatenate files

CO9: Rename a file

CO10: Create a directory

CO11: Display the contents of a directory

CO12: Display the user initialization files

CO13: Change the working directory

CO14: Return to the home directory

CO15: Remove a directory

Course Title: Datamining

CO1: Understand the functionality of the various data mining and data warehousing component

CO2: Analyzing techniques of various data

CO3: Understand different methodologies used in data mining and data ware housing.

CO4: Compare different approaches of data ware housing and data mining with various technologies.

Course Title: Practical Introduction To Web Designing(Html &Css)

CO1: Understand the principle of Web page designing

CO2: Understand the basics in web design

CO3: visualize the basic concept of HTML

CO4: recognize the elements of HTML

CO5: Understand the basic concepts of CSS

Course Title: E-Commerce

CO1: understand the foundations and importance of E-commerce

CO3: analyzing branding and pricing strategies

CO4: determining the effectiveness of market research

Course Title: Client/Server Computing

CO1: Understand the basics and evolution of c/s computing

CO2: Understand about the c/s applications and operating systems

CO3: Learn the client hardware and software and GUI environment

CO4: Understand about the types of servers and network managing environment

CO5: Learn the platform independence transaction processing, testing and diagnostic Tools and backup & recovery mechanisms

Course Title: Cloud Computing

- CO1:** gain a clear understanding of the concepts that underlie distributed computing systems along with design and implementation issues.
- CO2:** understand key mechanisms and models for distributed systems including logical clocks, causality, vector timestamps, distributed hash tables, consistent global states, election algorithms, distributed mutual exclusion, consistency, replication, fault tolerance, distributed deadlocks, recovery, agreement protocols
- CO3:** learn how to design and implement distributed algorithms

Course Title: Software Testing

- CO1:** To learn the fundamentals and principles of software testing.
- CO2:** To learn techniques of testing and models of testing
- CO3:** To understand the significance of testing and data flow testing strategies
- CO4:** To learn the essentials of metrics and test cases

Course Title: Distributed Computing

- CO1:** To understand the concept of distributed database, security, distributed processing
- CO2:** To learn the concepts of hardware, network operating systems, distributed systems and Their design issues
- CO3:** To understand the communications in distributed systems
- CO4:** To learn about the synchronization in distributed systems and thread implementations
- CO5:** To gain knowledge about distributed file systems

22. M.A ECONOMICS**PROGRAM SPECIFIC OUTCOMES:**

- PSO1:** Application of monetary and fiscal policies to maintain stability in an economy.
- PSO2:** Finding solutions for Macro economic problems through micro foundations.
- PSO3:** Maintain strong and healthy fiscal federalism in India.
- PSO4:** Provide solutions for the problems in International trade such as BOP etc..
- PSO5:** Apply Keynesian and modern economist approach to solve the problems in internationally monetary system.
- PSO6:** Find out different ways by which improve the contribution of women in economic

development.

PSO7: Provide different methods by which reduce the consumption of renewable and non-renewable energy resources:

PSO8: Improve the sustainable development by increasing the Green GDP.

M.A ECONOMICS COURSE OUTCOMES:

Course Title: Micro economics –I

CO1: To evaluate modern utility demand theories.

CO2: Critically analyse Cobb-Douglas production function and apply it in finding returns to scale.

CO3: Examine different traditional and modern theories of costs.

CO4: Critically analyse the equilibrium of perfect competition and monopoly market structures.

CO5: To Demonstrate and analyse monopolistic and oligopoly market structures.

Course Title: Indian Economic Development and Policy-I

CO 1: To analyse economic development environmental degradation in India.

CO2: Differentiate centralized and decentralized planning .

CO3: To analyse different Indian plan models such as Mohalanobis, input and output and ` multi- sectoral models.

CO4: To measure National income and GDP by different methods.

CO5: To provide solutions to reduce poverty and unemployment in Indian economy.

CO6: To analyse different Indian trade policies.

Course Title: Research Methodology

CO 1: To demonstrate nature and scope of social research.

CO2: To identify the research problem and to formulate research hypotheses and research design .

CO3: To analyse different techniques of data collection.

CO4: To analyse data by applying different techniques.

CO5: To demonstrate research presentation with diagrams and references.

Course Title: Energy Economics

- CO 1:** To analyse different energy resources and their role in Economic development.
- CO2:** To examine and compare the intensity and elasticity of energy in National and International level.
- CO3:** Critically analyse the problem of energy crisis and environmental degradation.
- CO4:** To apply different methods of energy conservation and energy management to promote sustainable development.
- CO5:** To analyse India's energy profile and find solutions to the energy crises.

Course Title: Mathematics for Economists –I

- CO1:** To apply set theory in economics.
- CO2:** To demonstrate the applicability of straight line, parabola and rectangular hyperbola.
- CO3:** To differentiate convex and concave functions, logarithmic and exponential functions.
- CO4:** To apply different techniques of differentiation.
- CO5:** To demonstrate the applicability of potential derivations-maxima and minima.

Course Title: Micro Economics-II

- CO1:** To analyse different modern theories of firm.
- CO2:** Critically analyse different distribution theories such as Ricardo, Carl Marx, Kaldor, marginal productivity theory etc,
- CO3:** To examine economics of information and finding solutions for asymmetric information.
- CO4:** To evaluate two sector model of general equilibrium theory.
- CO5:** To analyse Kaldor-Hicks-Compensation criterion and Bengon Criterion

Course Title: Indian Economics Development Policy –II

- CO1:** To analyse agricultural price policy, agricultural credit, food security and PDS.
- CO2:** Examine the Industrial growth at National and State Level.
- CO3:** To evaluate agricultural growth at National and State Level
- CO4:** To analyse all human development indicators in India.
- CO5:** To demonstrate the role of infrastructure in economic development.
- CO6:** To analyse Indian fiscal federation and give solution for development .

Course Title: Statistics for Economists-I

- CO1:** To apply probability theory in economics.
- CO2:** To demonstrate the applicability of Binomial, Poisson and Normal distribution in research.
- CO3:** To analyse the different types of sampling techniques.
- CO4:** To demonstrate hypothesis testing such as Null and alternative hypothesis and Type I and Type II error.
- CO5:** To apply F test, T test and ANOVA to find out the significance of different variables in research.

Course Title: Mathematics for Economists-II

- CO1:** To analyse Lagrange multiplier method in utility, cost and profit maximization.
- CO2:** To apply Matrices in economics.
- CO3:** To demonstrate and apply Input-Output analysis.
- CO4:** To analyse Linear Programming methods.
- CO5:** Differentiate Indefinite integrals and definite integrals.

Course Title: Environmental Economics

- CO1:** To analyse the market failure and externality and Pareto optimality.
- CO2:** To demonstrate natural resources exploitation and finding solution for it.
- CO3:** Distinguish environmental cost of economic growth and sustainable development.
- CO4:** To apply cost benefit analysis to reduce environmental degradation.
- CO5:** To analyse different pollution control measures.

Course Title: Macro Economics-II

- CO1:** To analyse the usage of IS-LM in determining equilibrium of an economy and evaluate the applicability of IS-LM in international trade
- CO2:** To demonstrate the evil effects of inflation and provide solutions for the problems of inflation through proper implementation of monetary and fiscal policies.
- CO3:** Critically analyse the theories of business cycle and finding solution to recover the economy from different phases of trade cycle
- CO4:** To apply Keynesian and Neo Keynesian models in the real world and find out the reasons for market and Government failure and giving solutions for these problems.

CO5: To analyse the different views of modern economists in solving the problem of inequality in international trade and maintain stability in an economy.

Course Title: Public Finance-II

CO1: To evaluate demand revealing schemes of public goods find out applicability of Keynesian case for stabilization.

CO2: To critically analyse Wiseman-Peacock hypothesis and reforms in public expenditure policy.

CO3: To demonstrate the equity and efficiency issues in fiscal federation.

CO4: To analyse the problems in Indian fiscal federation and different tax policies of center and state.

CO5: To brief stability in an economy how to apply fiscal and monetary issues

Course Title: International Economics-II

CO1: To demonstrate the developments in International monetary system.

CO2: To analyze the problems of disequilibrium in BOP and finding solutions to correct disequilibrium in BOP.

CO3: Critically analyse the international problems of Asian region and European Union.

CO4: To demonstrate the function of WTO, IMF and World Bank and Asian Development Bank.

CO5: To evaluate different theories of trade.

Course Title: Monetary Economics

CO1: To demonstrate the role of money in Keynesian and Post-Keynesian approach

CO2: To analyze the demand for money in Keynesian and Post-Keynesian

CO3: To distinguish between Classical and New Tobin's views on interest and monetary policy.

CO4: To evaluate monetary system in India.

CO5: To analyse International monetary system.

Course Title: Financial Economics

CO1: To demonstrate the function of money market.

CO2: To analyze Indian Capital market.

CO3: To examine the stock market system in India and analyze the guide lines of SEBI.

CO4: To demonstrate Indian derivative market and its regulations.

CO5: To analyse functions and various financial market.

Course Title: Gender Economics

CO1: To demonstrate the significance of women studies in socio-Economic development.

CO2: To analyse the different theories of women expenditure.

CO3: To demonstrate the role of UNO and World Bank in women's development.

CO4: To analyse the contribution of women in economic development

CO5: To demonstrate the progress and programmes of women entrepreneurs.

CO6: To analyse the problems of women and provide solutions to empower them.

Course Title: Macro Economics-I

CO1: To demonstrate the knowledge on how the money is being circulated in an economy.

CO2: Able to measure the cost of living by using CPI & WPI

CO3: They will be able to calculate GDP by using different methods and able to estimate each and every method properly.

CO4: Able to apply all the theory of consumption function.

CO5: Able to analysis the credit a new consumption theory.

CO6: Able to apply and analyze all investment function theories in the real economic situation.

CO7: To analyse And Evaluate the concepts of multiplier and Accelerator to improve the growth rate of an economy

CO8: To differentiate how the income and employment generation differ from classical school to modern school of economics.

CO9: To analyse wage price flexibility theories and apply in the real economic situation to find out solution for economic instability.

CO10: The role of RBI in money supply and how to apply monetary and fiscal policies to maintain stability in an economy.

Course Title: Public Finance-I

CO1: To demonstrate the role of public enterprises in India and analyse different pricing policies followed in public enterprises.

CO2: To evaluate the Pareto Optimality, market failure and theory of second best.

- CO3:** Differentiate public goods, private goods and analyse different theories of taxation.
- CO4:** Examine the practical problems of deficit financing and giving solutions for burden of public debt.
- CO5:** To analyse different theories of Budget and find out the applicability of balanced budget and Zero- based budget.

Course Title: International Economics-I

- CO1:** To analyse the different international trade theories.
- CO2:** To Demonstrate different concepts in terms of trade.
- CO3:** To evaluate the technical progress in international trade.
- CO4:** To analyse different forms of Government intervention in international trade and development.
- CO5:** To critically analyse the role of FDI in economic development.
- CO6:** To demonstrate the foreign exchange market and different types of exchange rate.

Course Title: Economics of Development

- CO1:** To analyse kuznet's invented U- hypothesis and welfare of Index .
- CO2:** To critically analyse population growth and economic development.
- CO3:** To demonstrate the role of education and health in economic development.
- CO4:** To analyse the role of agriculture and rural development in macro economic stability.
- CO5:** Evaluate different development planning and apply the fiscal and monetary policy. To maintain stability in an economy

Course Title: Health economics

- CO1:** To analyse the equity and efficiency issues in demand and supply of health care
- CO2:** To differentiate various types of health production functions.
- CO3:** To analyse different health care incentives and financing for it.
- CO4:** To measure and valuing health utility instruments and their development.
- CO5:** To analyse health care system in India and give solutions to some problems.

23. M.S.W PROGRAM SPECIFIC OUTCOMES:

PSO1: To impart education and training in professional social work in order to provide manpower in social welfare, development and allied fields capable of working at various levels of micro, meso and macro systems

PSO2: To help students develop knowledge, skills, attitudes and values appropriate to the practices of social work profession.

PSO3: To enable students develop creative thinking and ability to apply theoretical knowledge in practice of social work.

PSO4: To facilitate interdisciplinary approach for better understanding of social problems, situations and issues of development.

M.S.W COURSE TITLE:

Course Title: Social Work Profession

CO1: Demonstrate professional social work values, principles and ethics at their workplace effectively.

CO2: Create customized social work tools and techniques and plan effectively addressing social issues.

CO3: Identify themselves with Professional Social Work forums at Regional, National and International levels.

CO4: Analyze the social situation clearly and assert the rights for each individual in society .

CO5: Will practice Rights based Approach in all the Social Work interventions.

Course Title: Social Work with Individuals

CO1: Apply case Work Values and Principles while working with Individuals.

CO2: Identify the Client's Problems and provide appropriate solutions.

CO3: Equip the skills relevant for Social Case Work.

CO4: Plan the Case Work Process.

CO5: Formulate appropriate intervention techniques.

CO6: Use effective communication techniques to identify the issues of the client.

CO7: Identify various settings and practice based on the social contexts of the country.

CO8: Predict the social contexts effectively and apply social case work techniques.

Course Title: Social Work with Groups

- CO1:** Will use values and principles of group work at their workplace.
- CO2:** Compile the group work session reports effectively.
- CO3:** Utilize the individual resources/strengths of the group members and design the intervention process effectively.
- CO4:** Apply basic ideas, tools and techniques in solving group issues and bringing development to the group.
- CO5:** Constantly evaluate the groups sessions to conduct the group work process effectively.
- CO6:** Plan and design each group work session based on the different social work setting.

Course Title: Sociology

- CO1:** Constantly analyze the institutions and their influence on individuals in the society.
- CO2:** Design strategies to address social issues in a scientific organized manner.
- CO3:** Critically analyze policies and schemes among the poor.
- CO4:** Compare and understand issues with reference to current global trend in terms of Liberalization, Globalization and Privatization.

Course Title: Psychology

- CO1:** Use the basics of Psychology while practicing Social Work.
- CO2:** Effectively identify the Psychology functions in human.
- CO3:** Evaluate the different problems at different stages of life effectively.
- CO4:** Assess the client using various personality theories
- CO5:** Identifying the concept of Mental Health and various Mental Disorders.
- CO6:** Analyze abnormal behavior of the clients effectively.
- CO7:** Apply stress Management Technique

Course Title: Social Work with Communities and Social Action

- CO1:** Apply knowledge of concepts needed to work with communities.
- CO2:** Demonstrate community organization skills while addressing local and regional issues.
- CO3:** Apply various models of community organization to bring social change.
- CO4:** Use various social action techniques and strategies while addressing social.

CO5: Critically analyze social problems and design appropriate strategies to address social issues.

Course Title: Social Work Research and Statistics

CO1: Analyze social issues using scientific knowledge and methods both empirically and conceptually.

CO2: Use participatory research methodology effectively while initiating new development projects.

CO3: Will formulate and do many action research to address social issues.

CO4: Apply research skills while working with civil societies, government and international organizations.

CO5: Create new research tools effectively.

Course Title: Social Welfare Administration

CO1: Demonstrate good administrative skills at workplace and in society.

CO2: Create and administer social welfare organizations especially non-governmental organizations effectively.

CO3: Demonstrate good financial administration skills at workplace and in society.

CO4: Compute the financial administration system in an organization.

CO5: Plan strategies for Co-ordination and co-operation between voluntary and government welfare agencies.

Course Title: Social Policy and Social Legislation

CO1: Will use knowledge of social legislations and policies while working with the grassroots and subaltern communities.

CO2: Scientifically analyze the policies and legislation of the state.

CO3: Will demonstrate good citizenship values propagated by the state in their families and workplace especially on the development of women and subaltern communities.

CO4: Apply values and ethics in all the development projects that they work.

CO5: Will evaluate social issues and use constitutional remedies for protection of Human Rights in India.

Course Title: Counseling

CO1: Apply Counseling skills at workplace.

CO2: Use various Counseling skills required and Counseling process.

CO3: Design Counseling techniques based on the social background of the client.

CO4: Using Counseling as a tool for managing changes and situations.

CO5: Demonstrate ethics in counseling.

Course Title: Rural Community Development (CD)

CO1: Assess internal and external resources of the communities.

CO2: Apply ideological perspective while working with communities.

CO3: Design and work on poverty eradication programs with international accepted scales.

CO4: Critically analyze political structure in the rural areas.

CO5: Use participatory tools (PRA) to do social research among rural communities.

Course Title: Labor Legislation (HRM)

CO1: Apply labor legislations at International, National and Regional levels.

CO2: Use appropriate skills for practicing labor law at factory, shops and establishments and the information technology sector.

CO3: Demonstrate suitable attitudes for the practice of labor laws at national and regional levels.

CO4: Evaluate Labor standards at workplace effectively.

CO5: Constantly compare the Labor standards at regional and global level.

Course Title: Mental Health and Psychiatric Disorders (MPSW)

CO1: To apply the phenomenology, symptom logy and treatment of common mental disorders.

CO2: Evaluate the client using various mental health assessment tools and taking Case History

CO3: Effectively identify Mental Disorders and overview of classification of Mental Disorders

CO4: Compare the various classifications of mental disorders.

CO5: Use legislation appropriate to Mental Health related issues.

Course Title: Development Economics (CD)

CO1: Critically analyze the Indian economy and various issues related to development economics

- CO2:** Predict the role of agriculture and industries in the development of our country.
- CO3:** Design appropriate programs to address the sustainable development goals of the United Nations in India.
- CO4:** Apply scientific strategy for food security among the poor.
- CO5:** Emphasize and recognize the role of women in the rural and urban economy.
- CO6:** Compare global and regional development standards constantly.

Course Title: Human Resource Management (HRM)

- CO1:** Compare the different functional areas of HRM & HRD.
- CO2:** Demonstrate effective managerial skills.
- CO3:** Will predict emerging trends in the field of HR.
- CO4:** Will design organizational policies and human resource planning.
- CO5:** Constantly assess changes and challenges happening in the global human resource management.

Course Title: Public Health in India (MPSW)

- CO1:** Apply multidimensional approach to Health.
- CO2:** Plan appropriate Preventive, Primitive and Rehabilitative health care program.
- CO3:** Compare the administration of various health care systems in country.
- CO4:** Utilize the National Health Programmed and Health Policies while working among communities...
- CO5:** Formulate health care programs with Human Rights perspective

Course Title: Working with Children and Youth (CD)

- CO1:** Effectively assess the problems of children in Urban and Rural Communities.
- CO2:** Plan appropriate programs and strategies to address the social problems of the youth and children in Indian society.
- CO3:** Effectively assess the need, plan projects, and evaluate national and international projects for the development of children.
- CO4:** Use appropriate strategies while working for the children under difficult circumstances like children affected by natural disaster, displacement and in conflict affected zones, etc.
- CO5:** Identify the factors leading to alcoholism and substance intake and plan appropriate programs to address it.

CO6: Formulate best programs involving in planning programs with NGOs, Civil Societies and the Government for the deprived children and youth.

CO7: Formulate research hypothesis and systematic research tools to do action research to constantly study the problem of children and youth.

Course Title: Employee Relations and Welfare (HRM)

CO1: Use knowledge on the industrial relation system in India.

CO2: Apply Industrial Relations techniques in trade union.

CO3: To formulate effective programs for the welfare of the staff working in organized and unorganized sector

CO4: Evaluate the implementation of social security systems at the workplace for the welfare of the staff.

CO5: Create appropriate grievance redressal systems for the welfare of the staff.

Course Title: Medical Social Work (MPSW)

CO1: Demonstrate ethical Medical Social Work practice.

CO2: Create appropriate systems to for the effective administration of Medical Social Work practice.

CO3: Apply all the methods of social work in hospital setting.

CO4: Constantly evaluate the need of the health programs among urban and rural poor.

CO5: Formulate community based rehabilitation strategies while working with disability.

Course Title: International Social Work (CD and MPSW)

CO1: Analyze poverty using international scales, especially that of the World Bank.

CO2: Identify the needs scientifically to plan appropriate programs in international crises situations like Refugees, Migration etc.

CO3: Apply skill in addressing emergency situations due to Natural calamities like floods, earthquake, tsunami, etc.

CO4: Use Project Cycle Management Skills in development projects.

CO5: Design participatory planning, designing and monitoring skills while working among the poor deprived communities.

Course Title: Strategic HR Management (HRM)

CO1: Compare local and International trends and strategic in Human Resource Management and evolve better systems.

CO2: Constantly revise job changes and employee retention.

CO3: Assess job worth and develop employee wage structures in companies.

CO4: Apply performance appraisal tools and techniques of strategic human resource management.

CO5: Design creative programs and exercises for employee motivation.

CO6: Identify potential areas/clients/partners of HR consultancy and HR outsourcing

Course Title: Social Entrepreneurship (CD and MPSW)

CO1: Mobilize the community to utilize the projects and schemes of development banks such as NABARD, DICS, and SSCS etc.

CO2: Training youth and women entrepreneurs in effective marketing skills.

CO3: Training women and young entrepreneurs in EDP skills.

CO4: Design projects for rural communities in incubating new social enterprise to address social issues in the communities.

CO5: Apply participatory research and needs assessment skills in setting up new social enterprise there by reducing vulnerability among the community.

Course Title: Quality Management (HRM)

CO1: Design appropriate quality management systems comparing various international standards.

CO2: Use latest quality function deployment techniques for the benefit of the management.

CO3: Demonstrate leadership qualities and ethics at workplace.

CO4: Formulate effective quality control tools like check sheet, Pareto chart, and affinity diagram.

CO5: Communicate effectively the quality management systems to the staff.

Course Title: Urban Community Development (CD)

CO1: Design action research to constantly understand of the issues of the slum dwellers and pavement dwellers.

CO2: Plan appropriate program for the development of communities living in urban slums.

CO3: Create awareness among community to utilize the state and central government projects for the welfare of Urban Poor. E.g. CMDA, IAY etc.

CO4: Demonstrate leadership skills and become agents of social change among the slum dwellers.

CO5: Design perfect strategies and programs for the development of the urban poor.

Course Title: Organizational Behavior (HRM)

CO1: Compare the dynamics of organizational behavior at international, national and regional levels and adopt relevant systems.

CO2: Constantly analyze the characteristics influencing human behavior in organizations.

CO3: Assess micro and meso perspective of staff team in an organization.

CO4: Design appropriate exercises for stress management and team work.

CO5: Apply techniques and tools for motivation among staff for the better productivity.

Course Title: Psychiatric Social Work (MPSW)

CO1: Compare international Psychiatric Social Work standards and adopt suitable standards.

CO2: Apply methods of social work among psychiatric patient, family and people with mental illness.

CO3: Create the Mental Hospital as a social system.

CO4: Demonstrate high knowledge and skill as Psychiatric Social Worker.

CO5: Formulate and design community mental health programs to address issues of mental health among community.

Course Title: Dalit and Tribal Development (CD)

CO1: Identify needs and issues Dalits and Tribal communities in South Asian region.

CO2: Capacitate the communities to utilize the schemes and facilities provided by the government and civil societies for the development of the Dalits and Tribal communities

CO3: Apply strategies for resilience of the Dalit and Tribal community from economic and social vulnerabilities using constitutional backup.

CO4: Effectively plan micro and macro projects for the development of the Dalit and Tribal communities.

CO5: Formulate strategies to promote Trade for the art and craft work produced by the tribal communities enhancing their livelihood sustainability.

Course Title: Organizational Development (HRM)

- CO1:** Design strategies and guidelines for development of the organization.
- CO2:** Revise organization policies adopting international standards.
- CO3:** Analyze group process approaches and use appropriate strategies for conflict management.
- CO4:** Plan appropriate strategies to address organizational issues effectively instead of avoiding them.
- CO5:** Evaluate organization systems from time to time and restructure the organization.

Course Title: Therapeutic Interventions in Social Work Practice (MPSW)

- CO1:** Use appropriate techniques for Therapeutic intervention in Social Work.
- CO2:** Identify the role of social worker in clinical practice and help accordingly.
- CO3:** Apply indigenous therapeutic techniques.
- CO4:** Plan appropriate programs for the treatment of HIV/AIDS, de addiction, diabetics, coronary heart disease.
- CO5:** Predict current trends in healing practice adopt at workplace.
- CO6:** Apply Transactional Analysis Therapeutic intervention.

Course Title: Women Development (CD)

- CO1:** Demonstrate and promote gender sensitive values in professional and personal life.
- CO2:** Students will be able to plan in order to work on the education and development of women in an equity perspective.
- CO3:** Design projects for the government and civil societies to address the practical and strategic needs of the women.
- CO4:** Apply better managerial skills in women development projects of the government like ICDS, NRHM etc.
- CO5:** Utilize the skills applied in order to work for the development of women in line with the National Women's Commission, CWDA Convention etc.

Course Title: Human Resource Development (HRM)

- CO1:** Apply the concepts and functions of Human Resource Development at workplace .
- CO2:** Formulate new policies and systems adopting emerging trends in the field of HRD.

CO3: Demonstrate attitude and skills required for employment in the field of Human Resource Development

CO4: Design tools to manage discipline, maintain work – life balance and how to handle Grievance in an organization.

CO5: Use appropriate tools to evaluate the function of the staff.

Course Title: Hospital Administration (MPSW)

CO1: Create appropriate systems for effective management of hospitals.

CO2: Compiling the roles and responsibilities of the Governing Board, Executive Board, Advisory Board, Nursing Staff and other staff.

CO3: Use IT as a tool to maintain records and systems in hospital administration.

CO4: Compare and evaluate the current issues in health care services.

CO5: Identify various dimensions of health.

**Course Title: Corporate Social Governance and Corporate Social Responsibility
(CD, MPSW and HRM)**

CO1: Constantly evaluate the company based on the Triple Bottom Line Approach.

CO2: Demonstrate and advocate for ethical business and corporate social responsibility.

CO3: Compare international standards in business establishments and evolve policies and systems at workplace.

CO4: Design gender sensitive systems in Business Environment.

CO5: Create CSR programs for the development of the communities around the factories and industries.

24. M.B.A

PROGRAM SPECIFIC OUTCOMES:

PSO1: Students with MBA degree may be employed at the managerial level in various sectors in different departments like finance, marketing, HR, administration, production, operations management, etc.

PSO2: This course makes the student ready to start and run their own venture in the most effective manner.

PSO3: They create employment opportunities and thereby they spur the economic growth of the country.

Course Title: Management Principle and Business Ethics

CO1: To highlight the management evolution and connect how it will affect future managers

CO2: To impart the role of planning in making business decisions

CO3: To familiarise and practice the organizing function leading to efficiency

CO4: To convey the fact that co-ordination is essential for survival and success

CO5: To reach out the importance of behavioral code and moral values in business

Course Title: Quantitative and Research Methods in Business

CO1: Introduction to basics of probability, probability distribution and decision-making in business

CO2: Understanding the different applications of calculus in business economy

CO3: Obtaining basic knowledge on research methods

CO4: Understanding the different applications of data analysis

CO5: Obtaining knowledge in report writing and format

Course Title: Organisational Behaviour

CO1: To make assessment of potential effects on organizational behaviour

CO2: To develop a basic understanding of individual behavior and its issues

CO3: To analyse the behavioural problems in team management and offer solutions

CO4: To observe and evaluate the different leadership styles to adapt an appropriate one

CO5: To apply organizational behaviour concepts, models and theories to real life management situations through case analysis

Course Title: Accounting For Managers

CO1: To define the general purpose and functions of financial accounting

CO2: To explain the concepts and procedures of financial reporting, including income statement, statement of retained earnings, balance sheet, and statement of cash flows

CO3: The impact of alternative accounting methods on financial statements

CO4: To examine the cost according to the level of business operations and schedule it to differentiate

CO5: To analyse how marginal cost affects profitability

Course Title: Managerial Economics

CO1: To understand the role of managers and fundamentals concepts that affects decision making

CO2: To analyse the demand and supply conditions and make sales forecasting

CO3: To explain the theories of production and figure out the different costs of production and how they affect short and long run decisions

CO4: To interpret the four basic market models of perfect competition, monopoly, monopolistic competition, and oligopoly, and how price and quantity are determined in each model

CO5: To demonstrate the key macroeconomic indicators affecting business such as fiscal policies, monetary policies etc

Course Title: Innovation and Entrepreneurship

CO1: To demonstrate the skills of entrepreneurship, including opportunities

CO2: To evaluate the opportunities for business in present environment

CO3: To enumerate the importance of innovation and creativity in development and managing growth of business

CO4: To prepare a comprehensive business plan for an original product or service that justifies potential profitability and sustainability of the business model

CO5: To articulate their ideas on small business model in an organized and persuasive manner

Course Title: Legal Systems in Business

CO1: To have an overview the basic rules of commercial law including breach of contract, the tort of negligence, liability for unsafe products, etc

CO2: To explain an advanced understanding of the nature and relevance of sales law

CO3: To demonstrate comprehensive and accurate knowledge and understanding of those areas of company law

CO4: To develop competence in industrial disputes and application of the law

CO5: To analyse and assess the need for consumer protection and outline the areas covered by consumer protection laws

Course Title: Applied Operations Research

CO1: Understanding Operations Research and Linear programming problem

CO2: Gaining knowledge on Transportation and Assignment problems

CO3: Understanding Network analysis and project scheduling

CO4: Understanding the basics of queuing theory and sequencing

CO5: Gaining knowledge on Game theory and Replacement policies

Course Title: Human Resource Management

CO1: To provide a strong foundation on basic HRM knowledge and skills

CO2: To enable implementation, and evaluation of employee recruitment, selection, and retention plans and processes

CO3: To develop, implement, and evaluate employee orientation, training, and development programs

CO4: Facilitate and communicate the human resources component of the organization's motivating plan

CO5: To administer and contribute to the design and evaluation of the performance management program

Course Title: Marketing Management

CO1: To identify core concepts of marketing and the role of marketing in business

CO2: Ability to develop marketing strategies based on product, price, place and promotion objectives

CO3: To evaluate the proper sales promotion method with suitable channel of distribution

CO4: To examine the factors influencing buyer behavior

CO5: To understand the role and importance of digital marketing

Course Title: Operations Management

CO1: Introduction describe the boundaries of an operations system

CO2: To recognise its interfaces with other functional areas within the organisation and with its external environment

CO3: To manage manufacturing and service operations efficiently

CO4: Provide a sound understanding of the key concepts relating to warehouse management in terms of both information and physical aspects of control

CO5: To know the techniques of MRP, Inventory control, work study and time study

Course Title: Financial Management

CO1: To understand both the theoretical and practical role of financial management in business corporations

CO2: To apply financial management concepts and tools to the decisions faced by a manager in finance

CO3: To evaluate on the various investment and dividend decisions

CO4: To understand the different forms of long term financing

CO5: Evaluate the comparative working capital management policies and their impact on the firm's profitability, liquidity, risk and operating flexibility

Course Title: International Business

CO1: To understand the global business environment

CO2: Gaining knowledge in differences in political economy and culture

CO3: To provide an overview on international trade theories

CO4: To create awareness on foreign direct investments and global monetary systems

CO5: Understanding the International business strategy and EXIM policy

Course Title: Strategic Management

CO1: Understand the role of strategy and its process

CO2: Identify the forces impacting and designing corporate policy

CO3: Environmental Analysis: Explain the importance of social, economic ,political forces; and technological factors

CO4: Be critically aware of factors involved in strategy making

CO5: Assess the resources and constraints for strategy making in a business context

Course Title: Management Information System

CO1: To describe the role of information technology and information systems in business

CO2: To have a broad understanding of database concepts and database management system software

CO3: Apply Management Information Systems knowledge and skills learned to facilitate the acquisition, development, deployment, and management of information systems

CO4: Effectively communicate strategic alternatives to facilitate decision-making through technology

CO5: Students are expected to demonstrate the ability to identify computer and network security threats

Course Title: Performance Management

CO1: Introduction to the basics of performance management system

CO2: Understanding the approaches and process followed in performance evaluation

CO3: Gaining knowledge on components and objectives of performance analysis process

CO4: To bring out the importance of performance review through mentoring and coaching

CO5: To provide knowledge on managing team performance and implementation of performance management system

Course Title: Human Resource Development

CO1: Demonstrate the knowledge and skills needed to effectively manage human resources

CO2: To understand the digitalization of HRM activities in an organisation

CO3: To have clear idea to manage cross cultural team in work place

CO4: To give an overview of developing career and competency

CO5: To demonstrate a commitment to lifelong learning by participation in professional development activities through coaching and counseling

Course Title: Organisational Development

CO1: Understanding the basic organisation structure and its lifecycle

CO2: Gaining knowledge on organisational culture and its role globally

CO3: To provide knowledge on work group behaviour and career stage model

CO4: To manage stress at work and suggest prevalent stress management techniques

CO5: Understanding change and interventions in an organisation

Course Title: Industrial Relations and Labour Welfare

CO1: Analyse the importance of harmonious relationship in industries

CO2: To examine of the role of the state and law in managing conflicts in workplace

- CO3:** To provide useful practical knowledge for workplace safety which helps identification, evaluation, and control of hazards
- CO4:** To provide a knowledge on the provisions of employee welfare in Indian context
- CO5:** To understand the importance of labour laws and its usefulness

Course Title: Merchant Banking & Financial Services

- CO1:** To provide an overview of merchant banking activities in India
- CO2:** To gain knowledge on the legal and regulatory framework, SEBI and stock exchanges operating in India
- CO3:** To understand the issue management process
- CO4:** Gaining knowledge on concepts like mergers, acquisitions, portfolio management services, leasing and hire purchases, etc
- CO5:** Basic understanding on the other financial services

Course Title: Corporate Finance

- CO1:** To enumerate the role of finance in the development of industries
- CO2:** Analyse the corporate financing decisions
- CO3:** To evaluate the short term working capital management policies and their impact on the firm's profitability, liquidity, risk and operating flexibility
- CO4:** To explain the concepts and procedures of financial reporting, including income statement, statement of retained earnings, balance sheet, and statement of cash flows
- CO5:** To explain and analyse the interrelationship between finance and governance

Course Title: Security Analysis and Portfolio Management

- CO1:** To understand the basics of security analysis and its evaluation
- CO2:** Basic introduction on fundamental and technical analysis
- CO3:** To provide knowledge on objective, measures and evaluation of securities
- CO4:** To create awareness on derivatives and mutual funds
- CO5:** Gaining knowledge on portfolio analysis

Course Title: Banking & Insurance

- CO1:** Introducing the Indian financial system and its regulations
- CO2:** Gaining knowledge on the basics of banking

CO3: To introduce various electronic banking avenues and marketing of banking services

CO4: Introducing the concept Insurance and its regulations

CO5: Gaining knowledge on the different insurance schemes

Course Title: Retail Marketing

CO1: Basic introduction to retail marketing and its growing importance

CO2: Understanding consumer behaviour in retail buying process

CO3: To provide knowledge on store layout and merchandising

CO4: Gaining knowledge on retail marketing mix

CO5: To provide knowledge on consumerism and ethics in retailing and understand the future of retailing

Course Title: Services Marketing

CO1: Basic introduction to service sector and its characteristics

CO2: Gaining knowledge on the 7ps of services marketing mix

CO3: To provide effective management of services marketing through proper strategy

CO4: To gain knowledge on service quality gaps and techniques to resolve it

CO5: To provide an overview on services marketing in various sectors

Course Title: Managerial Skills

CO1: Negotiation skills

CO2: Interpersonal and persuading skills

CO3: Kinesics

CO4: Business Etiquettes

CO5: Personal Grooming and Interview Skills

Course Title: Project work & Viva-Voce

CO1: Develops scientific approach in solving a problem

CO2: Identification of research problem

CO3: Knowledge on collection and tabulation of data

CO4: Using the right tools for the analysis of data

CO5: Correct interpretation of data and effective decision making

Course Title: Spoken and Presentation Skills

CO1: General Language Knowledge and Presentation

CO2: Special Language Knowledge and Presentation

CO3: General communication Skills for Presentation

CO4: Professional communication Skills for Presentation

CO5: Social communication Skills for Presentation

Course Title: Language and communication skills

CO1: Twinning functions of listening and speaking

CO2: Twinning functions of Reading and writing

CO3: Individual communication

CO4: Intermediary communication

CO5: Social communication

Course Title: Contemporary Awareness

CO1: Awareness on Recent Developments in science and Technology including development in Space, Telecommunication and computers.

CO2: Knowledge on Environmental issues, Human resources and related issues, Role of national Institutions.

CO3: Preparedness on International Affairs and Institutions/Organisations related to it.

CO4: Indian Politics and Economy

CO5: Geographical facts about India and the world

Course Title: Internship

CO1: Integrate theory and practice.

CO2: Assess interests and abilities in their field of study.

CO3: Develop work habits and attitudes necessary for job success.

CO4: Build a record of work experience.

CO5: Acquire employment contacts leading directly to a full-time job following graduation from college.

25. M.COM

PROGRAM SPECIFIC OUTCOMES:

- PSO1:** Impart the ethical values and norms required for facing the challenges of growing Trade and Industry.
- PSO2:** Expertise in handling tax filing systems, GST and required accounting standards for business environment.
- PSO3:** Equip themselves with required managerial and accounting skills to face the challenges of business in special circumstances.
- PSO4:** Empower themselves in the Research field with their acquired knowledge to meet the societal needs.
- PSO5:** Update the international business practices by obtaining skills pertaining to Innovation and Technology.
- PSO6:** Accomplish their ambition by the acquisition of necessary communicative Skills, Managerial skills and Marketing skills.
- PSO7:** Enable themselves in managing Costs, Revenue, Pricing and budgetary techniques for effective financial management of business.
- PSO8:** Construct a complete business profile as a professional or as an entrepreneur globally.

27.M.SC MATHEMATICS

PROGRAMME SPECIFIC OUTCOME:

- PSO1:** Develop specific knowledge in main subfields of pure and applied mathematics to apply them independently to solve problems of real life situations.
- PSO2:** Demonstrate an understanding of Abstract Algebra, Analysis, Differential, Difference Equations, Topology, Geometry .Graphs, Fuzzy concepts ,Stochastic Processes, Number Theory, Decision Making and Programming.
- PSO3:** Demonstrate skills in analyzing concepts and solving given problems at a high level of abstraction.
- PSO4:** Initiate students to write review articles of research papers which infuses to do Research further.
- PSO5:** Create ability to apply mathematical methodologies in various sectors like banking, IT, TNPSC, UPSC, etc.

PSO6: Inculcate knowledge in basics of each subject which makes students of different performing levels to learn with ease.

PSO7: Transform students to become motivated Teachers , Professors and Researchers in the fields of mathematical sciences globally .

M.SC MATHEMATICS CO:

Course Title: Algebra– I

CO1: Discuss of equivalence relation on finite set , equivalence class , order of equivalence class and using it find the results about finite group and study the Sylow's theorem and the application of Sylow's theorem.

CO2: Formulate a new group using a given group and one of its automorphisms, Discussion of the structure of an arbitrary finite abelian group such as fundamental theorem on finite Abelian group.

CO3: Analyze the canonical forms, triangular forms and nilpotent transformations.

CO4: Compute the Jordan form, rational canonical form and companion matrix of the polynomial on finite dimensional vector space V over F and linear transformation T .

CO5: Discuss Trace, Transpose, Hermitian, Unitary and Normal of linear transformation, Solving the problems.

Course Title: Real analysis – I

CO1: Explain the functions of bounded variation and class of functions closely related to monotonic functions.

CO2: Discuss the Riemann-Stieltjes integral and its properties and related problems.

CO3: Analyzing the Riemann integral and its properties and related problems.

CO4: Explain the sequence of functions and related problems.

CO5: Identify the pointwise convergence and uniform convergence.

Course Title: Ordinary Differential Equations

CO1: Demonstrate the second order homogeneous equations-Initial value problems-Linear dependence and independence-Wronskian and a formula for Wronskian.

CO2: Use knowledge the homogeneous and non-homogeneous equation of order n –Initial value problems-Annihilator method to solve non-homogeneous equation.

CO3: Build up the initial value problems -Existence and uniqueness theorems – Solutions to solve a non- homogeneous equation.

CO4: Communicate the second order equations with regular singular points –Exceptional cases – Bessel equation.

CO5: Apply the ODE with variable separated – Exact equation – Method of successive approximations – the Lipschitz condition – Convergence of the successive approximations and the existence theorem.

Course Title: Graph Theory

CO1: Demonstrate Graphs, Sub graphs and Trees which helps in real-life to track the path or know the direction of the road using GPS.

CO2: Demonstrate Cut Vertices and Edge Connectivity and Vertex Connectivity which is a vital component in designing Networks.

CO3: Demonstrate Euler Tours, Hamilton Cycles and Edge Chromatic Number that aids to create circuits and in geographical map coloring.

CO4: Demonstrate Independent Sets, Cliques and Vertex Colorings.

CO5: Demonstrate Plane, Planar Graphs and to study related Theorems on it.

Course Title: Fuzzy Sets and their Applications

CO1: Fuzzy sets and various operations on fuzzy sets are introduced.

CO2: Fuzzy graph, fuzzy relations and fuzzy subset induced by a mapping are learnt.

CO3: Similitude, Dissimilitude, order relations are discussed.

CO4: Reduced polynomial forms and composition of intervals are introduced.

CO5: Fuzzy groupoids, Fuzzy monoids and Fuzzy groups are analyzed.

Course Title: Algebra – II

CO1: Establish the relation of one field to another and the degree of extension field.

CO2: Determine the root of a given polynomial $p(x) \in F[x]$ on extension field K over F .

CO3: Study the Galois group associated with a polynomial $p(x) \in F[x]$ and the relationship between roots of a polynomials and its Galois group.

CO4: Determine all possible finite fields and many of their important properties and discussion of Wedderburn's theorem, Finite division rings on finite fields.

CO5: Contemplate the solvability by radicals and solve the problems by using it, derivation of Galois groups over the rational.

Course Title: Real analysis – II

CO1: Discuss about a class of measurable sets on the real line and the measurable functions and related problems.

CO2: Explain the approximation to measurable sets by intervals or by open sets lead to results on approximation to the integral of a measurable function and compare the Lebesgue and Riemann integrals.

CO3: Evaluate the Fourier series and Fourier integrals and related problems.

CO4: Compute the Directional derivative and the total derivative and related problems.

CO5: Discuss an Implicit functions and Extremum problems and related properties.

Course Title: Partial Differential Equations

CO1: Demonstrate the comprehensive knowledge to classification of Second Order PDE – Canonical Forms.

CO2: Recognize the importance of Occurrence of the Laplace and Poisson Equations.

CO3: Plan and execute the Occurrence of the Diffusion Equation –Boundary Conditions and problems.

CO4: Apply the Occurrence of the Wave Equation – Derivation of One-dimensional Wave Equation – Solution of One-dimensional Wave Equation by Canonical Reduction – The Initial Value Problem.

CO5: Core competencies the Green's function for Laplace equation – the methods of Images – the eigenfunction method.

Course Title: Probability Theory

CO1: Knowledge on Random Events, Random Variables Distributions and Distribution Functions.

CO2: Recognize the importance of Parameters, Order Parameters of the Distribution and Two types of Regression.

CO3: Apply Characteristic Functions and its Properties.

CO4: Build up on various Probability Distributions.

CO5: Execute on Limit Theorems and Laws of Large Numbers.

Course Title: Programming in C++ and Numerical Methods

CO1: To discuss about Tokens, Expressions, Control Structures and Functions in C++.

CO2: To study about Classes and Objects, Constructors and Destructors, Operator Overloading and Type conversions

CO3: To brief about Inheritance, Pointers, Virtual Functions and Polymorphism.

CO4: To discuss about The solution of Nonlinear Equations $f(x)=0$ and Interpolation and Polynomial Approximation

CO5: We study about Curve fitting and Solution of Differential Equations.

Course Title: Complex Analysis - I

CO1: Establish the Cauchy's Integral Formula - The Integral formula - Higher derivatives.

CO2: Demonstrate the general form of Cauchy's Theorem: Chains and cycles- Simple Connectivity – Homology.

CO3: Evaluate Definite Integrals and Harmonic Functions and related problems.

CO4: Contemplate Harmonic Functions and Power Series Expansions and exercise problems.

CO5: Demonstrate Partial Fractions and Entire Functions.

Course Title: Topology

CO1: Explain the topological space, open and closed sets, limit points and continuous functions are introduced as natural generalizations of the real line and Euclidean space.

CO2: Apply the connectedness and compactness to the related problems.

CO3: Discuss the countability and separation axioms and related exercises.

CO4: Compute the problems for product topology and Tychonoff theorem.

CO5: Explain the concept of homotopy of paths and fundamental group.

Course Title: Operations Research

CO1: Make decision under various decision making environments and determine the expected value of perfect information, expected opportunity loss and expected monetary value associated with any decision.

- CO2:** Make the determination of the time schedule (Start and completion dates) for the activities of a construction project, find the shortest route between two cities etc... by network models.
- CO3:** Understanding the meaning of inventory control as well as various forms and functional role of inventory, use the economic order quantity (EOQ) to minimize the inventory cost, compute the reorder level (ROL).
- CO4:** Understand various components or parts of a queuing system, Identify and examine situation that general queuing problems, understand distinct among several queuing models and derive performance measures for each of them.
- CO5:** Realize the need to study replacement and maintenance analysis techniques, Make distinctions among various types of failures, Apply replacement policy for items whose efficiency deteriorates with time and for items that fail completely.

Course Title: Mechanics

- CO1:** Demonstrate the Generalized Co-ordinates, Virtual Work, Energy and Momentum.
- CO2:** Apply the Lagrange's equation for holonomic, non-holonomic systems, Ignorable coordinates, Routhian function are learnt. Differential equations of motion are derived using the above methods.
- CO3:** Knowledge on Hamilton's Principle, Equations and Other Variational Principles.
- CO4:** Build up Hamilton-Jacobi form and Stackels conditions are derived.
- CO5:** Analysis the Differential Forms, Generating Functions, Special Transformations and Lagrange and Poisson Brackets

Course Title: Number theory and Cryptography

- CO1:** To discuss about Elementary Number Theory, Time Estimates for doing arithmetic, divisibility and Euclidean algorithm, Congruence, Application to factoring and related problems.
- CO2:** We study about Introduction to Classical Crypto systems, some simple crypto systems, Enciphering matrices DES and related problems.
- CO3:** To discuss about Finite Fields, Quadratic Residues and Reciprocity and related problems.
- CO4:** We study about the Public Key Cryptography, The idea of public key Cryptography, RSA, Discrete log, Knapsack, Zero-knowledge protocols & oblivious transfer and related problems.

CO5: To discuss about the Primality , Factoring, Elliptic curves and Elliptic curve crypto systems, Pseudoprimes, The Rho method, Fermat factorization and factor bases, The continued fraction method, The quadratic sieve method convergence and uniform convergence and related problems.

Course Title: Complex Analysis - II

CO1: Demonstrate Riemann Zeta Function and Normal Families, Product development – Extension of $\zeta(s)$ to the whole plane, the zeros of zeta function, Equicontinuity, Normality and compactness, Arzela's theorem and Families of analytic functions.

CO2: Demonstrate Riemann mapping Theorem, Boundary Behaviour, Use of the Reflection Principle. Conformal mappings of polygons, Schwarz-Christoffel formula, Mapping of a rectangle, Harmonic Functions, Functions with mean value property and Harnack's principle.

CO3: Comprehend Elliptic functions, simply periodic functions and doubly periodic functions.

CO4: Impart knowledge on Weierstrass Theory, Weierstrass p-function, functions $\zeta(s)$ and $\eta(s)$, The differential equation, modular equation $\lambda(\tau)$, The Conformal mapping by $w = z + i\pi \cot(\pi z)$ and related problems.

CO5: Elaborate Analytic Continuation, The Weierstrass Theory, Germs and Sheaves, Sections and Riemann surfaces, Analytic continuation along Arcs, Homotopic curves, The Monodromy Theorem and Branch points and related problems.

Course Title: Differential Geometry

CO1: Knowledge of the Curves, parametrisation, arc length, level curves, curvature, plane and space curves and related problems.

CO2: Recognize the importance of the patches, smooth surfaces, tangents, normals, orientability, Examples of surfaces, Lengths of curves on surfaces, the first fundamental form, isometries, surface area and related problems.

CO3: Demonstrate the second fundamental form, Curvature of curves on a surface, normal, principal, gaussian and mean curvatures, Gauss map and related exercises.

CO4: Apply on geodesics, geodesic equations, Geodesics as shortest paths, geodesic coordinates and related problems.

CO5: Analyse the theorem egregium, isometries of surfaces, Codazzi – Mainardi Equations, compact surfaces of constant Gaussian curvature and related exercises.

Course Title: Functional Analysis

- CO1:** Discuss about the Normed spaces, Continuity of linear maps, Hahn-Banach Theorems, Banach Spaces and related problems.
- CO2:** Explain the Uniform boundedness principle, Closed Graph and Open Mapping theorems, Bounded Inverse Theorem, Spectrum of a bounded operator.
- CO3:** Apply the concept of Duals, Transposes, Weak and weak *convergence and Reflexivity problems.
- CO4:** Formulate the Inner Product Spaces, Orthonormal sets, Best approximation, Projection and Riesz Representation theorems and related problems.
- CO5:** Discuss the Bounded operators and adjoints, Normal, unitary and self adjoint Operators, Spectrum and Numerical range and related exercises.

Course Title: Mathematical Statistics

- CO1:** Student t-distribution, chi-square distribution, Fisher's Z distribution are learnt.
- CO2:** Various significance tests are introduced.
- CO3:** Various methods of estimations are learnt.
- CO4:** One way and two way classifications of Analysis of variance are learnt.
- CO5:** Sequential analysis is learnt.

Course Title: Stochastic processes

- CO1:** State the defining properties of various stochastic process models.
- CO2:** Sample on a computer any type of continuous or discrete time stochastic process.
- CO3:** Identify appropriate stochastic process model(s) for a given research or applied problem.
- CO4:** Provide logical and coherent proofs of important theoretic results.
- CO5:** Apply the theory to model real phenomena and answer some questions in applied sciences.

29. M.C.A

PROGRAMME SPECIFIC OUTCOMES:

- PSO1:** Define and discuss about the Computer Hardware, Networks, Operating systems, latest technologies, Database Management Systems, important concepts of Software

Engineering, developing Algorithms, utility and efficiency of popular Programming languages, basic concepts of Software Testing, Quality Assurance and Project Management.

PSO2: Analyze the problem requirements, prepare and use appropriate architectural and detailed designs to build software components using Object Oriented Analysis and UML diagrams.

PSO3: Create Applications (Software) as per the Programming standards for the given Problem requirements in C, Advanced Java, PHP, Python etc.. Create necessary Database Schemas in MySQL, Oracle etc and integrate with the application.

PSO4: Discuss and analyze basic concepts and applications of Data Science, Big Data, Data Analytics, Artificial Intelligence, Machine Learning, User Interface Design, Cloud Computing, Information Security, Robotic Process Automation,

PSO5: Develop an ability to apply knowledge in the Computing discipline. Be acquainted with the contemporary issues, latest trends in technical development and thereby innovate new ideas and solutions to existing problems. Identify, Explain and Deploy current technologies in the IT industry.

M.C.A CO:

Course Title - Problem Solving and Programming in C

CO1: Understand the fundamental concepts of Problem solving

CO2: Analyze the given problem statement with appropriate programming standards

CO3: Construct C application using control statements, Arrays, Structures, Union and Functions

CO4: Identify the usage of Pointers, functions, dynamic memory allocation and implement them in program

CO5: Demonstrate Graphics using various drawing objects

Course Title: Computer Communication and Networking

CO1: Recognize Computer Networks, Topology, categories of networks and OSI layers

CO2: Explain about Data Link Layer, Error Detection and handling, protocols

CO3: Describe about Network Layer, Switching types, Connection oriented and connection less services, Routers and Routing algorithms.

CO4: Interpret LAN protocols, Token rings, Token bus, Addressing and frame format, LAN Security, Threats etc

CO5: Recognize TCP/IP Networking, Architecture, Internetworking, Network characteristics, Network Addressing and Routing

Course Title: Open Source Technologies

CO1: Describe the basics of Open Source software and Linux Operating System

CO2: Demonstrate files in Unix environment with file Attributes and permissions

CO3: Experiment with vi editor. Execute basic Unix Commands to filter, sort

CO4: Paraphrase Regular Expressions and utilize the concept in programming

CO5: Classify Processes- Parent, child, foreground, background and implement them in programs

Course Title: Software Engineering

CO1: Explain about the Software Product and Software Process characteristics. Differentiate the Software Process Models like Linear Sequential Model, Evolutionary Process models etc., and identify the situations in which they should be followed.

CO2: Illustrate how to Elicit Requirements, Validate requirements and Analyze them and Create model for Function-oriented and Object – Oriented software development.

CO3: Sketch and model software components following Design Concepts and Principles using UML Diagram. Create Architectural design of Software. Examine User Interface design Component based design concepts and Design metrics

CO4: Defend the purpose, types, approaches and levels of testing and types of bugs. Explain Flow / Graphs and Path testing concepts. Demonstrate Transaction flow Testing techniques, Data flow Testing strategies and metrics for Testing

CO5: Interpret W5HH principle, Project Management techniques, and Decomposition techniques. Understand Software Measurement and Metrics used. Experiment the methodology of Project Estimation, Project Scheduling, Risk Assessment and Mitigation

Course Title: Practical – Programming in C

CO1: Analyze the given problem

CO2: Formulate Algorithm for solving the given problem

CO3: Construct C program based on the algorithm

CO4: Evaluate the correctness of syntax and debug errors if any.

CO5: Examine the output to verify correctness of the logic

Course Title: Practical – Open Source Technologies

CO1: Analyze the given problem

CO2: Formulate Algorithm for solving the given problem

CO3: Construct shell program based on the algorithm

CO4: Evaluate the correctness of syntax and debug errors if any.

CO5: Examine the output to verify correctness of the logic

Course Title: Data Structures and Algorithms

CO1: Sketch programs using abstract data types, complexity analysis, arrays, linked lists and its types, stacks and queues.

CO2: Explain Binary trees, tree traversal, searching , graphs- implementation and traversal, and Minimum cost spanning trees

CO3: Demonstrate algorithms like Sorting, Searching.

CO4: Appraise 8-Queens, Job sequencing and knapsack problems solving

CO5: Discriminate Backtracking, Greedy Method, Divide and conquer methodologies to formulate algorithm

Course Title: Advanced Internet Technologies

CO1: Discuss about HTML5 and CSS3, Creating and viewing a webpage.HTML document and Structure – using Text and List , tables in HTML, Experimenting with forms , Images and managing media in HTML.

CO2: Illustrate webpage using Style Sheets

CO3: Create Webpage using Java script.

CO4: Develop Webpage using VB script

CO5: Recognize XML elements, DTD types

Course Title: Operating Systems

CO1: Describe the basic concepts in Operating systems like Multiprogramming, Time Sharing, Services, System calls, System programs, Process , Concurrent Processes. Explain CPU scheduling and differentiate Scheduling algorithms

- CO2:** Realize about Process Synchronization done by Operating System, Explain Classical problems in Synchronization, Inter process communications, Deadlocks and Deadlock handling
- CO3:** Appraise and discriminate Storage Management methodologies like Swapping, Paging and Segmentation, Virtual memory, Page Replacement Algorithms, Free Space Management, Disk Scheduling, allocation methods, performance and reliability improvements
- CO4:** Explain Files, their protection, operations, access methods, File system organization and directory structure.
- CO5:** Recognize Protection and security provided by an Operating System and realize the security problems. Examine intrusion detection and cryptography.

Course Title: Advanced Java Programming

- CO1:** Apply concepts of Java servlet and create efficient applications that use Java Servlet.
- CO2:** Apply concepts of Java Server Pages and create efficient applications that use Java Server pages
- CO3:** Employ RMI and create efficient applications
- CO4:** Experiment with EJB and create efficient applications that use EJB
- CO5:** Recognize Spring Framework and Beans

Course Title: Advanced Internet Technologies

- CO1:** Construct interactive web pages using HTML, CSS
- CO2:** Demonstrate programming knowledge in VBScript
- CO3:** Demonstrate programming knowledge in Java Script
- CO4:** Evaluate the correctness of syntax and debug errors if any.
- CO5:** Examine the output to verify correctness of the logic

Course Title: Advanced Java Programming

- CO1:** Create interactive web application using HTML and Servlet
- CO2:** Create interactive web application using HTML and JSP
- CO3:** Create interactive web services using RMI
- CO4:** Evaluate the correctness of syntax and debug errors if any.
- CO5:** Examine the output to verify correctness of the logic

Course Title: Java Programming

- CO1:** Discuss basics of Object Oriented concepts, Java programming language- Classes, Objects, Constructors, overloading.
- CO2:** Employ Inheritance, Interface, exception handling, overriding, multithreading, Deadlock to create efficient Java applications..
- CO3:** Demonstrate I/O streams, String handling, Wrapper classes.
- CO4:** Develop Applets, Event handling, Use windows, graphics, AWT package and create Java Application
- CO5:** Experiment JDBC, implementation, Database handling and Networks basics

Course Title: Computer Communication and Networking

- CO1:** Recognize Computer Networks, Topology, categories of networks and OSI layers
- CO2:** Explain about Data Link Layer, Error Detection and handling, protocols
- CO3:** Describe about Network Layer, Switching types, Connection oriented and connection less services, Routers and Routing algorithms.
- CO4:** Interpret LAN protocols, Token rings, Token bus, Addressing and frame format, LAN Security, Threats etc
- CO5:** Recognize TCP/IP Networking, Architecture, Internetworking, Network characteristics, Network Addressing and Routing

Course Title: Web developing using PHP & MYSQL

- CO1:** Examine Apache, MySQL, PHP, and Open Source. Explain the Overview of PHP Structure and Syntax
- CO2:** Recognize and demonstrate fundamentals of PHP language like variable, constants, control statements, built in functions, cookies and sessions
- CO3:** Experiment PHP with Arrays of Data and files..
- CO4:** Examine Form elements, form manipulation, and table manipulation..
- CO5:** Integrate and examine PHP With MySQL Server

Course Title: Software Engineering and Project Management

- CO1:** Explain the Software Product and differentiate Software Process models.

- CO2:** Demonstrate Requirement Elicitation, Analysis, and Specification. Experiment Object-oriented software development, Use case Modeling.
- CO3:** Describe the Software Design Process, Design Concepts and Principles, Software Modeling and UML. Distinguish and appraise Architectural Design, User Interface Design, Function-oriented Design
- CO4:** Interpret Software Analysis and distinguish different approaches, types and levels of Software Testing.
- CO5:** Describe and Discuss Software Maintenance & Software Project Measurement, Software Configuration Management (SCM), Software Change Management, Version Control, Change control and Reporting, Program Comprehension Techniques, Project Management Concepts.

Course Title: Computer Graphics

- CO1:** Explain Video display unit, Computer Graphics
- CO2:** Discuss Output primitives and their attributes. Demonstrate line-Drawing and circle drawing algorithms and area filling.
- CO3:** Differentiate 2D Transformations and other transformations. Explain clipping algorithms
- CO4:** Describe Interactive Input Methods, Three-dimensional concepts and viewing. Differentiate Parallel and Perspective Projections and Depth Cueing
- CO5:** Discuss 3D Transformations. Explain Viewing Pipeline and Coordinates- Demonstrate Transformation from World to Viewing Coordinates. Compare Hidden Surface and Hidden Line Elimination Methods.

Course Title: PRACTICAL – Programming in Java Lab

- CO1:** Analyze the given problem with Object Oriented approach
- CO2:** Formulate Algorithm for solving the given problem
- CO3:** Construct Java program based on the algorithm
- CO4:** Evaluate the correctness of syntax and debug errors if any.
- CO5:** Examine the output to verify correctness of the logic

Course Title: PRACTICAL – PHP & MYSQL Lab

- CO1:** Construct interactive web pages using HTML, CSS, JavaScript, VBScript & PHP

- CO2:** Design responsive website using HTML, CSS
- CO3:** Create rich and efficient Online application
- CO4:** Construct a dynamic website that integrates PHP program and MYSQL database
- CO5:** Deploy web application for the given problem

Course Title: Advanced Java Programming

- CO1:** Apply concepts of Java servlet and create efficient applications that use Java Servlet.
- CO2:** Apply concepts of Java Server Pages and create efficient applications that use Java Server pages
- CO3:** Employ RMI and create efficient applications
- CO4:** Experiment with EJB and create efficient applications that use EJB
- CO5:** Recognize Spring Framework and Beans

Course Title: PRACTICAL -J2EE-RDBMS Lab

- CO1:** Create interactive web application using HTML and Servlet
- CO2:** Create interactive web application using HTML and JSP
- CO3:** Create interactive web services using RMI
- CO4:** Create Interactive web applications with Oracle as backend
- CO5:** Create Web applications that execute stored procedures in the backend.

Course Title: Python Programming

- CO1:** Describe Python Programming language – data types, constants
- CO2:** Demonstrate String manipulations in applications.
- CO3:** Experiment control statements in Python applications
- CO4:** Examine Functions in Python applications
- CO5:** Create a full fledged Python application to solve the given Problem.

Course Title: PRACTICAL - Python Programming

- CO1:** Analyze the given problem with Object Oriented approach
- CO2:** Formulate Algorithm for solving the given problem
- CO3:** Construct Python program based on the algorithm
- CO4:** Evaluate the correctness of syntax and debug errors if any.
- CO5:** Examine the output to verify correctness of the logic

Course Title: Advanced Database Management System

- CO1:** Discuss basic concepts, need, advantages and characteristics of Database and Relational Database Management systems
- CO2:** Design Entity Relationship diagram for the given Problem requirements using the appropriate notations.
- CO3:** Create, Alter, Normalize and Delete Database Tables. Examine Transaction Control Language commands. Understand Database Administrator's tasks and User Privileges.
- CO4:** Examine data in a database precisely. Illustrate usage of Commands like, Select, Insert, Update and Delete.
- CO5:** Explain basics of PL/SQL. Create and appraise Database objects like Store Procedures, Functions and triggers. Handle Exception conditions efficiently.

Course Title: Software Testing and Quality Assurance

- CO1:** Explain Software Testing Fundamentals. Differentiate between Bug types. Discuss about Testing life cycle, Test plan, and Test cases
- CO2:** Compare and contrast Black Box Testing, White Box Testing, Experiment Syntax testing, path coverage, branch coverage, statement coverage, Boundary Value Analysis etc
- CO3:** Distinguish and compare Different types and levels of Testing such as Performance, Load, Stress, Security testing and Unit Testing , Integration Testing , System Testing.
- CO4:** Explain Reviews, its types. Discuss about Review Meeting, Review Reporting & Record keeping, Examine Review guidelines and Data flow analysis
- CO5:** Describe and Discuss Software Quality Assurance Fundamentals

Course Title: Cloud Computing

- CO1:** Discuss basics, advantages and needs of Cloud Computing.
- CO2:** Explain Cloud Services, web based applications, web services, Development services, tools, different clouds.
- CO3:** Illustrate cloud usage in day-to-day requirements like to-do lists, contact lists etc.
- CO4:** Experiment cloud services for needs like collaborating calendars, schedules, task management etc
- CO5:** Demonstrate Collaboration via Web-Based Communication Tools, to Evaluate Web Mail Services and evaluate Web Conference Tools

Course Title: .NET Technologies

- CO1:** Describe and appraise .NET Technologies such as Scripts, Server side technologies, platform of .NET and .NET Framework Components.
- CO2:** Experiment VB.NET IDE and examine building blocks of VB.NET such as Forms, properties window, Solution Explorer, Keywords, data types, control statements.
- CO3:** Describe programming features, concepts and experiment application development using VB.NET
- CO4:** Discuss OOP concepts and experiment its deployment in VB.NET. Examine Web Application Development
- CO5:** Discuss and experiment ADO.NET, ADO.NET Connectivity, ADO.NET classes, ADO.NET namespaces, Interfacing VB.NET application with ADO.NET

Course Title: PRACTICAL - .NET Lab

- CO1:** Create VB.Net Console application
- CO2:** Construct user friendly Windows application using tools
- CO3:** Create application to demonstrate Database connectivity
- CO4:** Evaluate the correctness of syntax and debug errors if any.
- CO5:** Examine the output to verify correctness of the logic

Course Title: PRACTICAL - Mini Project

- CO1:** Identify the problem requirements of an Organization and document them.
- CO2:** Analyze the problem requirements and document them.
- CO3:** Develop appropriate architectural and detailed designs to build software components using Object Oriented Analysis and UML diagrams.
- CO4:** Construct an Application based on the design made by them.
- CO5:** Evaluate the Application in all aspects

Course Title: Big Data Analytics

- CO1:** Apply features of R language to perform data operations. Execute applications in Hadoop environment.
- CO2:** Describe file system of HDFS. Analyze data with R in Hadoop. Identify problem, design data requirement, preprocess data and perform analytics to visualize data.

- CO3:** Import and export from various databases. Explain data files and install R
- CO4:** Deploy data in MongoDB . Apprehend Machine Learning Concepts. Differentiate Supervised and Unsupervised Machine Learning algorithms and utilize appropriate algorithms.
- CO5:** Apply Linear Regression and Logistics Regression using R . Perform clustering operations using R

Course Title: Object Oriented Analysis and Design

- CO1:** Describe Objects, Object Oriented System development, Patterns and Frameworks
- CO2:** Analyze Objects, identify their attributes, methods, relationships, responsibilities
- CO3:** Design classes based on Design Axioms, Describe about Object Storage and Object Interoperability.
- CO4:** Design User Interface, View Layer classes and View layer interface
- CO5:** Define basic concepts of UML and create Use Case Diagrams, Sequence Diagrams, State Chart Diagrams, Class Diagrams, Component Diagrams, Deployment diagrams using UML editor Star UML.

Course Title: Information Security

- CO1:** Define and Discuss Security, Attacks, Computer criminals, Secure programs, Non-malicious programs errors, viruses and method of defense program security
- CO2:** Compare Operating System Security like methods of protection, memory protection, Access control, File Protection and Authentication.
- CO3:** Define and discuss about Database security, security control, Reliability, Integrity and multilevel databases.
- CO4:** Explain Network security, security control, threats, Firewalls, Intrusion detection and Cryptography.
- CO5:** Examine Security planning, Risk Analysis, ethical issues in Computer security, Protecting programs .and ethical issues.

Course Title: Project and Viva Voce

- CO1:** Analyze the problem requirements of the Organization in which they do the project and document them.

- CO2:** Develop appropriate architectural and detailed designs to build software components using Object Oriented Analysis and UML diagrams.
- CO3:** Construct a Real Time Application based on the design made by them.
- CO4:** Evaluate the Application in all aspects
- CO5:** Deploy them in Client Environment.

32. HINDI COURSE OUTCOMES:

Course Title: Prose, Functional Hindi & Translation

- CO1:** To enhance the knowledge of various hindi prose forms like satire, essay, reports, memoir.
- CO2:** To identify and formulate the situation of natural disasters and identify the issues related to it.
- CO3:** To learn and develop language skills through English Hindi translations and vice-versa.
- CO3:** To improve knowledge of technical words
- CO4:** To practice letter writing skills
- CO5:** To motivate to demonstrate human values in different life situations
- CO6:** To discuss the elements of one act play and demonstrate the same.

Course Title: Short Stories, Novelette and Creative Writing

- CO1:** To analyze and evaluate the current social, cultural & political scenario of the country.
- CO2:** To Prepare Newspaper and magazines report and to enhance creative skills and presentation skills.
- CO3:** To plan and execute the framework of jingles creation and presentation thereby enhance the creative skills and improve language skills.
- CO4:** To develop communication skills through discussions on short stories and novels.
- CO5:** Identify the social problems of the current society.
- CO6:** To improve critical thinking by assessment of situations and apply it to real life situation.
- CO7:** To demonstrate human values learnt from short stories.
- CO8:** To develop gender equality approach in students.
- CO9:** To improve the emotional and ethical quotient of students.
- CO10:** To motivate in creation of advertisements.

Course Title: Ancient and Medieval poetry, History of Hindi literature

CO1: To enhance knowledge of medieval Indian society's social political and cultural mellow

CO2: To outline the basic structure of history of Hindi literature

CO3: To identify the various poets of medieval era

CO4: To assess and explain the impact of hindi poets on society

CO5: To critically evaluate the poems in political and social context

CO6: To revise and analyze the poems of bakhti kal

CO7: To apply bhaktikaleen concept in modern context

CO8: To demonstrate the growth of hindi literature over the centuries

Course Title: Modern poetry and Hindi literature

CO1: To assess the impact of Indian Freedom struggle on Indian Hindi literature

CO2: To formulate Modern political and social ideas based on poems

CO3: To identify the new words and phrases that came into force after the introduction of khadi boli

CO4: To identify and compile the growth and worth of khadi boli in 19th century

CO5: To discuss the various forms of poems

CO6: To compare the different eras of modern hindi literature

CO7: To analyze the various elements of stories and novels

36. ENGLISH COURSE OUTCOMES:

Course Title: Preliminary Level

CO1: Inculcate the values of life such as being Optimistic, Conservation of Nature and Confidence Building.

CO2: Appreciate and associate the aesthetics of the English Language as seen through Figures of Speech, Rhymes Scheme, Diction and Syntax found in poems.

CO3: Analyse the different characters in different times and situations and apply that in real- life situations through the reading of Short Stories and Novella.

CO4: Apply the knowledge of the basic Parts of Speech learned through Grammar to communicate effectively.

CO5: Develop the ability to write fluently with grammatically acceptable sentences and construct Paragraphs through Functional English.

Course Title: Transitional Level

- CO1:** Sensitize about the right choice of career to cherish forever, explore the common Psychological and Socio-economic problems faced by Indians, learn about the historical heritage of Indian monuments.
- CO2:** Demonstrate tolerance in the midst of racial or any other differences, live with love and peace, glorify life and have moral faith in the creator through the reading of the poems.
- CO3:** Identify and explore the real intentions of characters around through Short Stories. The students apply conversational skills with others which they learned through One-Act-Plays.
- CO4:** To be effective in communication, knowledge of Tense and Aspect, Voice, Reported Speech, Degrees of Comparison facilitates the confidence of the learners.
- CO5:** Knowledge of Language Skills including Synonyms, Antonyms, Affixes, Spelling, and Noun-Number, help the learners apply in competitive examinations.

Course Title: Intermediary Level

- CO1:** Evaluate the difference between Personal and Professional life, Right to Education, Protection of Children and Women's Rights through Prose Lessons.
- CO2:** Apply the roles in life with compassion and individual responsibilities and assess the innumerable sacrifices made in the past to transform our lives for the better through poems.
- CO3:** Analyse the odd as well as the exemplary characters in life through stories.
- CO4:** Explore the eccentric human actions and their consequences through Drama.
- CO5:** Use the grammatical structures like different Questions, Clauses and Kinds of Sentences.
- CO6:** Prepare Formal Letters with CV, Resume and Various Report, Maintain Diary of Event through Functional English.

Course Title: Advanced Level

- CO1:** Apply the increased proficiency at the Advanced Level for the Professional Development through Prose Lessons.
- CO2:** Formulate future life with integrity and assess the intentions of individuals through poems.
- CO3:** Use of the proper knowledge of facts, importance of the e Women's Writings, humour in mistaken Identity through stories.

CO4: Apply the knowledge of Creative Writing like stories, Reports and Features in Journals and Newspapers.

CO5: Formulate Circulars and Invitations; Prepare Welcome Address and Vote of Thanks.

CO6: Use of Flawless Sentences, idioms and phrases, Foreign Expressions, British/American words through Language Skills.