



GURU NANAK COLLEGE (AUTONOMOUS)

Reaccredited at "A" Grade by NAAC Affiliated to the University of Madras
Guru Nanak Salai, Velachery, Chennai – 600042.

PROGRAMME OUTCOME -2019 Batch

U.G -Humanities

- Able to enrich their **knowledge** in political and socio-economic issues
- Able to emerge as good citizens of India by giving respect to the **Ethical** values of democracy and principles of human rights.
- Able to **understand** the concept of Inclusive Growth and its importance in socio-economic development.
- Able to **link** all the theories with concrete realities and analyse the extent of their application in regional, national and global contexts.
- Able to **analyse** the budget of the government in a neutral manner and provide suggestions.
- 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.
- 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
- Able to understand the concept of Green GDP, Green Society and all **sustainable goals** of the United Nations for **Sustainable Development**.

P.G -Humanities

- Through **effective communication** skills along with sound knowledge in political and socio economic issues of past and present, the students will be able to analyse all the issues critically and will have skills to be employed either as a Journalist, Research Assistant or Research Associate.
- Able to score more marks in the Civil Service examinations with the sound knowledge in the **applicability** of all theories in the real world.

- 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.
- Able to **recognise** different value systems of the society and provide policy suggestions to achieve inclusive growth.
- Able to carry out **research** by applying all environmental and welfare theories in the real world, evaluate, analyse and **provide policy suggestions** to achieve a higher rate of growth with lesser environmental degradation.
- Able to apply **Academic literacy skills** when submitting reports, projects and research.
- Able to **analyse and examine** the socio economic policies and programs of the government and able to provide appropriate **policy suggestions** in making changes in the monetary and fiscal policies to maintain stability in an economy.
- Able to become good academics (Professors) with a sound knowledge in political and socio-economic aspects. Through means of self-motivation and lifelong learning , they will be able to **relate the relationship between different disciplines**.
- Able to understand all **sustainable goals** of the United Nations Organisation (UNO), and able to find out all possible ways by which each and every Sustainable goal could be achieved.
- 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 - Commerce

- **Critical Thinking:** To acquire analytical and problem solving skills in various disciplines of Management, Business, Accounting, Tax, Finance and Law.
- **Effective Communication:** Communicate effectively with the accounting professionals & IT community and with society at large. To face the challenges of communication of the industry by writing effective reports, making effective presentations, and giving and receiving clear instructions.
- **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.

- **Ethics:** Apply Ethical principles and commit to professional ethics and responsibilities and norms of the Accounting practices.
- **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, Finance, Auditing and Marketing.
- **Industrial Exposure:** To acquire hands on experience in various aspects of administration,, managerial and leadership skills through internships and projects to cope with the contemporary, national and global level curricular andco-curricular aspects.

P.G - Commerce

- **Knowledge:** Aims to provide students with the knowledge, tools of analysis and skills with which to understand and participate in the modern Business and Accounting
- Equip them for subsequent studies and prepare them to achieve success in their chosen career.
- **Core competence:** Demonstrated major theories and generates realistic solutions based on government and firms' policy as well as equip the students to face the modern day challenges in Commerce and Business.
- **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.
- **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 use a variety of modes such as effective reports & documentation, effective presentations, and give and receive clear instructions.
- **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.

- **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 - Management

- **Communication Skills:**
Ability to prepare appropriate business documents.
- **Critical Thinking:**
Learn how to use analytical tools to address business issues.
- **Global Perspective:**
Understand the issues and challenges of managing global enterprises.
Apply specific disciplinary knowledge in a global context.
- **Knowledge Acquisition:**
Acquisition of specific business discipline knowledge.
- **Working Collaboratively:**
Learning how to make positive contributions to the team.

P.G - Management

- **Effective Business Communication:** An ability to communicate effectively in both verbal and non-verbal means to different stake holders.
- **Professional behavior:** An understanding of professional integrity, and ethics in carrying out the business.
- **Marketing Skills:** Developing persuasive skills to cater to the diverse markets and applying the appropriate strategies in different stages of customer engagement.
- **Analytical Skills:** Extrapolating and interpreting data for effective decision making.
- **People management:** An ability to function effectively in a team and to be a role model for others to emulate.
- **Critical thinking for problem solving:** Differentiating symptoms & problems and framing the best course of action after evaluation of all possible alternatives.
- **Research orientation:** An ability to use information and knowledge effectively by being scientific in approach.

- **Entrepreneurship:** Inculcating innovation, risk taking ability and internal locus of control.
- **Experiential learning:** Exposing the students to get real time experience to make them corporate ready.

U.G – Sciences

- Dissipate knowledge of Mathematics and Science, for bringing out new concepts and simplifying complex problems
- Subject wisdom gained for multitasking that is required for facing challenges in the competitive world
- Demonstrate creativity through the skills acquired for societal upliftment
- Conduct in a dignified and friendly manner while working as a team
- Communicate effectively to achieve professional and psychological growth

P.G - Sciences

- Conceive new scientific concepts to solve complex scientific problems
- Communicate effectively and use e-media resources for holistic development
- Employ innovative greener ideas to support sustainable development of the society
- Lead a team with integrity and follow professional ethics to reach higher levels in the career
- Execute interdisciplinary research attitude to develop products that can be patented

U.G -Information Technology

- Build the necessary skill set and analytical abilities for developing computer based solutions for real life problems.
- Ability to select appropriate techniques to tackle and solve problems in Big Data Concepts.
- Use the techniques, skills, and modern hardware and software tools necessary for information technology
- Communicate effectively in a variety of professional contexts. Function as effective members in multidisciplinary and diverse teams

- Design and develop reliable software applications for social needs and excel in IT enabled services.
- Analyze and identify the customer requirements in multidisciplinary domains.
- Create high level design and implement robust software applications using latest technological skills.
- Proficient in successfully designing innovative solutions for solving real life business problems and addressing business development issues with a passion for quality, competency and holistic approach.
- Perform professionally with social, cultural and ethical responsibility as an individual as well as in multifaceted teams with a positive attitude.
- Capable of adapting to new technologies and constantly upgrade their skills with an attitude towards independent and lifelong learning.

1. B.A English Programme Specific Outcomes:

- Interpret various forms of literature like prose, poetry, drama and fiction
- Perceive different cultures and cultural sensibilities around the world
- Analyze the various literary movements that existed in different ages.
- Develop the knowledge of grammatical system of English language.
- Define literary theory and terms in criticism.
- Develop four language skills LSRW.
- Write analytically in different formats like essays, reviews, research papers etc.
- Scope of employability and entrepreneurship in the field of Media and Journalism, Teaching, Public Relations, Human Resource, Civil Services, Creative Writing etc.

B.A English Course Outcomes:

Course Title: Age of Chaucer

- Explain the prose in respective age.
- Determine the prose style in detail.
- Identify the poetry in a specific text.
- Define the thorough observation of drama with a respective age and text.
- Analyse the poetry equipped with the text.

Course Title: Age of Milton and Restoration Age

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

Course Title: History of English Literature I

- To describe how literature influences the social and political history of each period.
- To describe and identify the poetry of major writers.
- Explain various schools and forms of drama of major writers.
- Identify the literary, cultural, historical, political influence of fictional works in the literary World.

Course Title: Romantic Age

- Describe the students with the outline of the prose through the respective age.
- Determine the romantic age authors and their style.
- Explain the poems of poetic devices to the specific text.
- Analyse the background of the drama and its culture to the respective era.
- Identity the experiment of novel concepts and its structure.

Course Title: Indian Writing in English

- Describe and differentiate the varieties of prose of major Indian writers.
- Identify the various forms and types of poetry.
- Specify the figurative language used in poems.
- Analyze the use of myth in Indian writing in English.
- To explain the issue or subalternity and regionality in the literary domain.

Course Title: History of English Literature II

- Explain the importance of brevity in writing.
- Compare English Literature of one period with that of another.
- Demonstrate major writers and their works in chronological order.
- Explain the ethical interpreters of literary text in English by nurturing their ability to understand drama.
- Identify the literary cultural, historical, political influencers of fictional works in the Literary world.

Course Title: Shakespeare

- Describe and discuss the themes brought up in Shakespeare's plays, poems and Sonnets.
- Analyze the structure and organizations of his dramatic works.
- Identify major literary characters in Shakespeare's works.

Course Title: Victorian Age

- Analyze the stylistic use of language.
- Define various elements of poetry such as diction, tone, form, and genre.
- Recognize the rhythms, metrics and other musical aspects of poetry.
- Demonstrate social and artistic movements that shaped theatre and dance as we know it today.
- Make us of the beauty of coherence of language and literature.

Course Title: Literary Forms

- Explain the introduction of literary terms.
- Identity the poetic devices to the connection of poems.
- Describe the process and origin of the development of drama in its structure with the text.
- Define the various types of novel with its structure.
- Analyse the different ways of essay with the text.

Course Title: Modern Age

- Gives insight into the major issues related to the social and cultural contents of the
- Recognize and analyze poetry I terms of different schools of poetry
- Interpret different genres of drama like comedy, tragedy, farce and melodrama.
- Perceive trends that prevailed in writing 20th century drama.
- Comprehend the development of 20th century fiction and elements of fiction- style, narrative forms and point of view.

Course Title: Phonetics and Phonology

- Comprehend the articulation of English speech sounds.
- Ability to read and write phonetic transcription.
- Identify the manner of articulation and classification of vowels and consonants.
- Adopt the functions of stress and intonation.
- Differentiate between the accents of British English and American English.

Course Title: Media and Communication

- Acquire in-depth knowledge of contemporary issues in media and communication.
- Make use of recent developments and current debates in media and communication through the range of modules.
- Explain various specialist sub disciplines, including big data, digital cultures, mobile media, news and information.
- Explain the methods of production and technological practices and relevant social issues.
- Demonstrate proficiency in writing in one or more professional media writing applications.

Course Title: American Literature

- Analyze American prose as a expression of individual or communal values curves within Social, Political and Cultural perspectives of different periods in American literature
- Demonstrate American literary movements through poetry of the age
- Trace the development of characteristic styles of expression through American Fiction
- Define the diverse dramatic styles or forms that existed though the ages in America.
- Express the aesthetic ideas present in both fiction and drama.

Course Title: Introduction to Linguistics

- Comprehend and express the nature and function of language.
- Develop the knowledge of the grammatical system of English language.
- Analyze the language variation in Historical, Social and Regional Dialects.
- Illustrate the differences in Phonetics, Phonology, Morphology, Syntax, Semantics and Pragmatics.
- Gain integrated knowledge of the four language skills LSRW.

Course Title: Women's Writing

- Interpret the concepts like women's liberty, empowerment, feminism and movements.
- Examine various literary selections of fiction, drama and poetry that focuses women's life
- Explain the development, themes and narrative perspectives of various works of women's writing.
- Identify the key point of a selection of feminist theory and apply them as a context for reading literary texts.
- Describe women's writing and critically analyze the varied views expressed in the text.

Course Title: Literary Criticism

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

Course Title: Travel Writing

- Recognize about the historical places.
- Realize the cultural heritage of the places.
- Familiarize with writing styles of various travel writers.
- Improve the factual knowledge and problem solving skills.
- Work on adaptability, cross-cultural competence and attitude Change.

Course Title: Indian Literatures in Translation

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

Course Title: European Drama

- Identify the familiar elements of European Drama.
- Analyse the different social issues in Europe.
- Determine the complex issues in European Literature.
- Explain the regional level of understanding.
- Describe the awareness of the changes and developments in the European Drama

Course Title: World literature

- Analyze the major writers and their works.
- Demonstrate and differentiate variety of prose.
- Explain and delineate the different types of drama by major writers.
- Assess mastery in aspects of plot, setting, themes

Course Title: Modern Latin American Literature

- Realize that anything can be a subject in an essay.
- Explain the historical background of Latin America and Spain.
- Interpret foundational knowledge relating to Historical, Socio-Cultural, Geographic and Economic conditions in Latin America.
- Discuss basic methodologies of social science research and writing as well as Humanities / language based research.
- 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

- Define kinds of poetry and types of poetry.
- Demonstrate poetry using poetic devices and metrical analysis.
- Explain dramatic devices used and assess the genre in which it is written.
- Illustrate characterization and its importance in drama and fiction.
- Validate the forms of literature by applying literary devices.

2. B.A Defence and Strategic Studies Programme Specific Outcome:

- Define the basic concepts of National security and Strategic aspects and different dimensions and approaches to National security.
- Explain the constitutional framework of various states
- Analyse the current Socio, Political, Economic and Military situation of the state under varying competitive conditions
- 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
- Demonstrate critical thinking skills to analyse and evaluate the way in which National Security Strategists examine the real world scenario for the purposeful resolution.
- Classify various theories of international relations and their application in contemporary scenario
- Familiarize the student to read, write and speak with confidence on different aspects affecting national security and offer solutions

- Make the students socially responsible and adopt ethical standards or practice and develop the feeling of patriotism and nationalism
- Assess and evaluate the working process of the government on National Security affairs in terms of Policy Formulation/Policy Making
- 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 Outcome:

Course Title: Core-I Strategic Study of India

- 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.
- Explain the physiographic features of the Himalayas, Indo-Gangetic plains and discuss India's Ethnic and Linguistic composition.
- 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.
- Outline the importance of India's resources with reference to Nature, Agriculture, and Industry.
- 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: Allied I -Political Science - An Introduction-I

- Define Political Science
- Outline the nature and scope of Political Science
- Distinguish whether Political Science is an Art or Science
- Define state, the various elements of the state.
- Explain the functions of the State.
- Distinguish between State and Government, State and Society.
- Analyse the importance of the various theories of the Origin of State

- Analyse the importance of Sovereignty and Pluralism
- Describe the role of the state and also explain the role of individuals with reference to fundamental rights, liberty, and duties.

Course Title: Core-II Fundamentals of War and Peace

- Define War and Peace. Explain the nomenclature of the subject Defence and Strategic Studies. Outline the relevance and significance of the program Defence and Strategic Studies.
- Outline the basic concepts of war and strategy, tactics, campaign, battle, and defence and security.
- Classify wars and explain the categorization of war.
- Discuss the causes of war and the principles of war.
- 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.
- 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: Core-III -Art of Warfare in India 1947

- 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 Mauryan military system and appraise Kautilya's philosophy of war and peace
- Explain the warfare in medieval India with reference to the Arabs Invasion on India, and the foundation of the Mughal emperor in India.
- Outline the military system of South India with reference to Cheras, Cholas, and Pandyas
- 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.
- 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: NME -Independent India

- Evaluate India's size, location, and physical environment.
- 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.
- Examine the basics of Indian Economy with reference to its resources. Also summarize the life lines of Indian economy.
- Discuss India's constitution, its importance in terms of its features, fundamental rights and duties and the Directive Principles of state policy.

Course Title: Core IV-World Military History

- Describe the military system in the ancient period with reference to Greco-Persian wars, their military organisations and rise of Alexander
- Identify the military system in ancient Rome. Their military organisation, the Carthaginian wars and the rise of Hannibal, Julius Caesar.
- Discuss the military system during the medieval period
- 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
- Discuss, explain and evaluate world war I (with reference to Causes, Course and Consequences)
- Discuss, explain and evaluate world war II (with reference to Causes, Course and Consequences)

Course Title: Allied-II Political Science an Introduction-II

- Outline the different forms of government and compare their relevant merits and demerits
- Define democracy
- Identify the Principles of Democracy
- Explain the merits and demerits of Democracy
- Summarize the conditions for the success of democracy
- Describe the various organs of the government
- Explain the role and functions of the legislative, the executive and the judiciary
- Evaluate the role and functions of the legislative, the executive and the judiciary
- Analyse the role of public opinion, political parties and pressure groups

- Evaluate the role of public opinion , political parties and pressure groups
- 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: NME-I Human Rights

- Define, classify human rights and explain the principles of human rights.
- Outline, explain and evaluate human rights abuses.
- Describe universal declaration of human rights and state the importance of human rights norms and explain the importance of humanitarian laws.
- Describe the role of UNO in promoting human rights.
- 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: Core V - Fundamentals of National Security

- Discuss the concept of Nation, State, Nation-State. Explain the origin, concept and objectives of national security.
- Explain the spectrum of threats, security structure and the national security paradigm. Distinguish between different forms of threat and challenges.
- Assess and evaluate the instruments of national security with reference to national power, military power and its components.
- Discuss the mechanics of national security.
- Identify and explain different types of threat and explain threat perception, threat assessment, threat analysis and policy formulation..
- Analyse, evaluate and assess the importance of national security concept in its totality and draw linkages with foreign and defence policies.

Course Title: Core- IV International Relations

- Explain the components of a State system
- Define National Power, National Interest and Foreign policy
- Explain the role of State system and its corollaries.
- Outline the various theories in International Relations

- assess and evaluate the significance of Idealism, Realism, Integration, Behaviouralism and Structuralism.
- Define the concept Diplomacy kinds of diplomacy, function of diplomacy and summarize the importance of Diplomacy in International Relation
- Discuss the concept of collective security
- Explain the concept of Balance of Power, the techniques, types of balance of power.
- Analyse the role of International Law.

Course Title: Core- VII Military Geography and Geo- Politics

- Outline the Fundamentals of Military Geography namely location, distance, climate, accessibility and visibility.
- Identify the importance of Geopolitics and Military Geography.
- Explain the importance of Geopolitics and Military Geography
- Evaluate the important theories of military geography and geopolitics with special reference to the theories of Mackinder, Haushofer and A.T. Mahon.
- Define the basics of the Global positioning system (GPS), the Global Information System (GIS) and Remote Sensing.
- Discuss the importance of Global positioning system (GPS), the Global Information System (GIS) and Remote Sensing.
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- Analyse the geo-strategic significance of India in terms of its location, natural resources, land mass –
- Evaluate the importance of Andaman, Nicobar and Lakshadweep Islands.
- Identify the maritime borders of India.
- Discuss the nature and characteristics of land borders maritime boundaries, Territorial, waters and Exclusive Economic Zone.

Course Title: Core – VIII International Organisations

- Discuss the evolution of International and Regional Organisations.
- Explain the characteristics of International and regional organisations.
- Distinguish between International Organisation (IO) & Regional Organisation (RO).
- Outline the importance of International Organisation (IO) & Regional Organisation (RO).

- Discuss the principles, powers, structure, role, functions and achievements of the League of Nations and UNO.
- Explain the salient features, aims, role, functions, achievements and importance of SAARC, ASEAN and ARF.
- Discuss the salient features of the European Union, Organisation for Security and Cooperation in Europe (OSCE).
- Explain the aims, 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: Core – IX National Security of India

- Outline India's National values, National Security Objectives, and India's Foreign Policy goals.
- Evaluate India's security threats like poverty corruption and Insurgency.
- Explain the consequences of threats like poverty, corruption, Insurgency
- explain the major issues, challenges and threats with Pakistan – J & K, Siachen, Sir Greek Island, Wuller Barrage and Terrorism.
- Discuss the major challenges, issues and threats evaluating from China namely the Boundary dispute, Tibet Mutual Rivalry at Regional and Global levels.
- Discuss the strategic importance of the Indian Ocean, India's interest and the growing strategic interests of major powers in the Indian Ocean and its impact on India.

Course Title: Core – X Specialized Warfare

- Define psychological warfare.
- Explain the different types and techniques of psychological warfare.
- Summarize the effects of psychological warfare.
- 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.
- Discuss the concept of Guerilla warfare, its characteristics.
- Distinguish between Guerilla warfare, Insurgency and terrorism.
- Explain the concept and origin of Nuclear warfare, the development of nuclear weapons and the impact of nuclear explosion.
- Define Terrorism
- Outline the causes of terrorism and explain the types and form of terrorism.

Course Title: Core - XI Basics of Defence Economics

- Explain the fundamental concepts, relating the Economics and Defence Economics.
- Explain the prevailing dichotomy between Defence vs Development.
- 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.
- Analyse the Defence expenditure, Defence Budget with Pakistan & China.
- To examine the process of Defence planning exercise in India and evaluate and assess the Defence needs in terms of weapons and Technological requirements.
- 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: Core – XII Higher Defence Organisation of India

- 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.
- Discuss the Field and Static organisation of Indian Army, Air force and Navy, Role and formation of paramilitary forces.
- Explain, assess and evaluate the organizational role and functions of various Indian Intelligence Agencies.
- Discuss and compare the higher defence organisation of USA, Russia, China and Pakistan with India.
- Explain the process of recruitment and selection methods, techniques in the Armed Forces, and paramilitary forces.

Course Title: IDE – Inter Disciplinary Elective Fundamentals of Journalism

- 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.
- Explain the purpose and meaning of Defence News, Kinds and Source of News, Various threats of news selections.

- 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.
- Explain the importance of editing. Define military terms, proof reading, caption writing and picture editing.
- 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: Core - XIII International Law

- 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.
- Discuss the laws of land, warfare, sea warfare and air warfare and explain the laws of maritime warfare, war crimes and genocides.
- Discuss the laws of Neutrality with reference to right of Angary, Contra band and doctrine of continuous voyage.
- Outline the importance of international law and explain war and its effects, its legal character and the settlement of disputes.
- Assess and evaluate the importance of blockade, prize courts. Explain the organisation, role and function of International court of Justice.

Course Title: Core – XIV Wars in Independent India

- Discuss the challenges of the partition of the British Indian Army.
- Discuss the causes, the course, consequences and specific military lessons learnt during India – Pakistan war of 1947 – 48
- Explain the causes of Sino – Indian war of 1962, the important operation of war and the major military lessons learnt.
- 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.
- Outline the major internal security operations with reference to Operation Blue Star, Operation Rhino and Operation Vijay.

Course Title: Core – XV Disarmament and Arms Control

- Outline the evolution of the Nuclear era since 1945. Define the basics of Nuclear Technology, Nuclear Energy and its Uses and abuses.
- Explain the development of missiles, its classifications, characteristics and the evolution of Nuclear Theories.
- 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.
- Describe the significance of Chemical and Biological weapon conventions.
- Evaluate India's contribution towards disarmament and arms control.

Course Title: Elective - II Limited Wars

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

Course Title: Elective – III Defence Management

- Define the term Management. Distinguish between Management and Administration. Explain the Principles and Process of Management.
- Outline the salient features and steps involved in planning, the concept of MBO and the decision making process and techniques.
- Discuss the definition, meaning, structure, functions, types, characteristics and principles of organisations
- 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.
- 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 Outcome:

- Demonstrate the behaviour of Indian and World economy,
- Analyse macroeconomic policies including fiscal and monetary policies of India
- Determine economic variables including inflation, unemployment, poverty, GDP, Balance of Payments using statistical methods
- Demonstrate the behaviour of financial and money markets and perform cost-benefit analysis for making investment decisions.

B.A Economics Course Outcome:

Course Title: Micro Economics-I

- Demonstrate the scope and significance of micro economics and its methodology.
- Distinguish Cardinal and Ordinal utility analysis.
Measure the different types and elasticity of demand.
Analyze the different types of Demand.
- Examine different Theories of Production, Function with Economies of Scale.
- Demonstrate different cost and revenue curves with Break-Even analysis.

Course Title: Statistical Methods-I

- demonstrate the importance of statistics in economics.
- Analyse different methods of data collection.
- Measure and examine mean, medium and mode.
- Apply measures of dispersion Gini Co-efficient and Lorenz curve
- Differentiate dispersion , skewness and Kurtosis

Course Title: Industrial Economics (Allied)

- Demonstrate the meaning and importance of industrial economics and its concepts
- Analyse the location of Small, Medium and Large scale industries.
- Differentiate between industrial production and productivity.
- Analyse the functions of National Productivity Council
- Distinguish between Short-Term, Medium and Long-Term industrial financing institutions.
Analyse the role of the Industrial sector in Indian Economic Development.

Course Title: Basics of Capital Market (NME)

- Demonstrate the functions and growth of capital markets in India.
- Examine the role and significance of Long-Term financial institutions.
- Demonstrate different types of shares, debentures and bonds and their importance.
- Distinguish between Primary and Secondary market.
- Analyse the role and functions of SEBI

Course Title: Micro Economics-II

- Analyse the Short-run equilibrium conditions of perfect competition.
- Analyse the different types of monopoly and its equilibrium.
- Distinguish between equilibrium conditions of monopolistic and oligopoly market structures.
- Demonstrate different theories of factor pricing
- Distinguish between classical, Keynesian and modern theories factor pricing.
- Demonstrate the concepts of welfare economics
- Analyse Pareto and Amartya Sen's views on Welfare Economics

Course Title: Statistical Methods-II

- To demonstrate different types of correlation in economics.
- To demonstrate different types of Regressions and its applicability in economics.
- To distinguish different kinds of Index numbers and construct cost of living index numbers.
- To analyse different components of time series analysis.
- To apply the theory of probability in economics.

Course Title: Entrepreneurial Development (Allied)

- To demonstrate the role and types of entrepreneurs in economic development.
- To analyse different theories of entrepreneurship.
- To demonstrate the evolution of Indian entrepreneurship and economic development.
- To analyse the role of MSME in industrial and entrepreneurship development.
- To prepare a project proposal to start any project.

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

- To demonstrate and analyse the concepts in economic development and economic policies.
- To analyse the population policy in India and its growth.
- To measure poverty line and examine the poverty alleviation programmes in India.
- To analyse the causes, consequence and remedial measures to control inflation in India.
- To apply monetary and fiscal policies to maintain stability in an economy.

Course Title: Macro Economics-I

- Demonstrate the nature and significance of macroeconomics and distinguish micro and macro economics
- Examine different methods of measuring national income
- Differentiate classical and Keynesian theory of employment
- Demonstrate the different theories of consumption functions
- Analyze different theories of investment function

Course Title: Money and Banking -I

- Demonstrate the evolution and functions of the money
- Analyze the growth of circular flow of money
- Evaluate the basic theories of money
- Critically analyze different theories of demand and supply of money
- Differentiate the Keynesian and Post Keynesian theories of money and its effect on price, production and distribution

Course Title: Basic Mathematics for Economists

- Demonstrate the different concepts and tools in mathematical economics
- Apply linear and non-linear functions in Demand and supply functions
- Demonstrate the vector and matrix's notations with economic concepts
- Demonstrate the basics of differential calculus in production function analysis
- Differentiate Definite and Indefinite integrals

Course Title: Environmental Studies

- Demonstrate the significance of environmental economics
- Analyze the existing renewable and non-renewable resources

- Differentiate conventional and non-conventional energy resources
- Analyze different pollution control measures
- Demonstrate different international environmental policies

Course Title: Macro Economics-II

- Demonstrate and analyze the concept of multiplier and accelerator
- Critically analyze Keynesian theory of output and employment
- Evaluate Post-Keynesian theories of demand for money
- Demonstrate different types of unemployment and causes of it
- To distinguish Keynesian and Classical theory of aggregate demand and aggregate supply

Course Title: Money and Banking -II

- To demonstrate the evolution and different branches of banking
- To analyse the functions of commercial banks and their role in economic development
- To analyse the functions of RBI and its role in economic development
- To demonstrate different objectives and instruments of monetary policy
- To Distinguish role of IMF and World Bank in economic development

Course Title: Basic Econometric Methods

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

Course Title: Indian Economic Development-I

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

Course Title: Fiscal Economics -I

- Demonstrate different Theories of public finance
- Analyse different theories of public expenditure and its growth
- Examine different types of taxes and incidence of taxation.

- Critically analyse direct taxes in India
- Demonstrate and analyse the taxable capacity in India

Course Title: International Economics -I

- Analyze the different theories of international trade
- Demonstrate different concepts of terms of trade and analyze the static and dynamic nature of it
- Evaluate different trade policies
- Demonstrate and evaluate Tariff and Quotas
- Critically analyze BOP and BOT

Course Title: Development of Economic Doctrines

- To demonstrate origin and development of economic ideas
- To analyse Karl Marxian theory and apply in the real world
- Critically analyse Marginal school of economic ideas
- Differentiate micro and macro foundations
- Demonstrate the applicability of welfare economics

Title: Economic of Population Studies (Elective)

- To demonstrate the basic concepts in economics
- To analyze the structure of labor and concepts
- To critically analyze the status of labor and employment in India
- To evaluate the implication of population growth
- To analyze the population growth and economic development.

Course Title: Indian Economic Development -II

- Demonstrate the concepts of growth and development indicators
- Analyze different economic growth theories from classical to balanced and unbalanced growth theory
- Examine the role of public sector in Indian Economic development
- Analyze outcomes of different five year plans
- Critically analyze the different growth models from Harrods Domar to Mahalanobis model

Course Title: Fiscal Economics -II

- Demonstrate the role of public debt in economic development
- Analyze different budget techniques and deficit financing in India
- Demonstrate the principles of federal finance and functions of the Finance Commission
- Critically analyze the role of fiscal policy in Indian economic development
- Demonstrate and analyze the functions of local bodies and the problems of its.

Course Title: International Economics-II

- Demonstrate the determination of different types of exchange rate
- Analyse different theories of exchange rate
- Analyse the role of FDI in economic development
- Demonstrate the role of IMF in World Trade Development
- Demonstrate the functions of World Bank, GATT, WTO

Course Title: Marketing (Elective)

- To demonstrate evolution of marketing
- To Differentiate different types of marketing
- To Analyse the facilitating function of marketing
- To Critically analyse different channels of distribution
- To Differentiate regulated and unregulated markets

Course Title: Urban Economics (Elective)

- To analyze the growth of urban areas and the system.
- To evaluate the size of city and the location
- To critically analyze the urban planning and infrastructure up gradation
- To evaluate the urban environment planning in critical sectors.
- To critically analyze the role of local finances in the urban infrastructure.

4. B.B.A Program Specific Outcomes:

- This programme is designed to develop knowledge on the functional parts of business administration.
- The disciplines covers include management, commerce, banking, economics, business law, statistics, accounting, communication, information system and e – business.
- At the under graduate level no other programme provides the student a feel and basic understanding on a variety of disciplines.

- These disciplines are not merely touched upon but are dealt taking the serious contributions it can provide to running business enterprises.
- The programme is designed in such a fashion to provide ample scope for practical exposure to the problems and opportunities of real business.

B.B.A (Accounting & Finance) Course Outcomes:

Course Title: Financial Accounting

- Be aware of the basic concepts of Accounting.
- Be aware of Sole trading Concern and Balance Sheet.
- Understand in preparation of suspense Account
- Acquire knowledge about depreciation and loss of Stock
- Acquire knowledge about Single entry and double entry system

Course Title: Principles of Management

- Be aware of the importance and levels of Management.
- Be aware of planning procedure and decision process.
- Understanding the types of organization, power and Authority
- Acquire knowledge about recruitment , selection and control process
- Acquire knowledge about business ethics and moral responsibility

Course Title: Business Communication

- Be aware of the basic principles of effective Communication.
- Be aware of business letters
- Understand the business Correspondence letters
- Acquire knowledge about Agenda, minutes , circular and notes
- Acquire knowledge about modern forms of communication

Course Title: Business and Corporate Law

- Identify the principles behind law of contract
- Get equipped to identify the validity of contracts
- Understand various special contracts
- To build a general awareness about the principles behind,
- Companies and partnerships

Course Title: Management Accounting

- Primary purposes of management accounting namely, inventory valuation, decision support and cost control.
- To Compare traditional and contemporary costing approaches for the above purposes.
- To Learn how costs are analysed for different product costing contexts such as job-order, process or joint-product systems
- Develop and apply standards and budgets for planning and controlling purposes.
- Apply incremental analysis to a range of business scenarios.

Course Title: Managerial Economics

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

Course Title: Marketing Management

- Be aware of Marketing Approaches and marketing mix.
- Be aware of Segmentation targeting and Positioning.
- Understand the PLC, NPD, Packaging & Labelling
- Acquire knowledge about advertisement, publicity & public relations
- Acquire knowledge about Channels of Distribution

Course Title: Financial Management

- Be aware of financial sources and the role of managing it.
- Be aware of Capital structure & equity proportion.
- Understand the concept of cost of Capital
- Acquire knowledge about dividend policies
- Acquire knowledge about Working Capital

Course Title: E- Business

- Be aware of Opportunities and goals of E- Business.
- Be aware of Network infrastructure for E- Business.
- Understand the concept of Internet Payment System
- Acquire knowledge about B2B models
- Acquire knowledge about WAP and Networking Standards

Course Title: Entrepreneurial Development

- Be aware of basic concepts of Entrepreneurship.
- Be aware of Entrepreneurial Development Agencies
- Understand the concept of Project Management
- Acquire knowledge about EDP
- Acquire knowledge about Economic Development & Entrepreneurial growth

Course Title: Personality Enrichment

- 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

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

Course Title: Management Information System

- To make a student handle and scientifically analyze the various aspects of business while he commence a business

Course Title: Financial Services

- Students get knowledge about financial services in India as Indian Financial System, Financial Markets, Banking and Insurance Sector in India and Recent Trends in Accounting and Finance
- Students are acquainted with current financial practices
- Students are well acquainted with Financial Markets

Course Title: Business Taxation

- Students know the Taxation concepts and articles of it.
- Students understand the importance of taxation policies.
- Students identify the taxable and non-taxable entities.
- Students able to analyze the Taxation Forms and Reports.

Course Title: Business Environment

- Understand multidisciplinary nature of environmental studies
- Be aware of bio diversity and its conservation
- Relate Environment and business
- Understand the concepts and ideas behind Green Entrepreneurship
- Understand Human Rights

Course Title: Organisational Behaviour

- Manage conflict amongst groups in business environment
- Comprehend and apply motivational theories in the workplace
- Identify changes within organizations and power and politics in organizations

Course Title: Business Research

- Be aware of basic concepts of research process in business.
- Be aware of research design and sampling techniques
- Understand the concept of questionnaire and graphical representation
- Acquire knowledge about hypothesis testing and test of significance Acquire knowledge about research report

Course Title: Advertising management and Sales Promotion

- Be aware of basic concepts of Advertising & copy development.
- Be aware of Mass Media & budget planning
- Understand the concept of advertising agencies
- Acquire knowledge about sales promotion Acquire knowledge about advertisement effectiveness

Course Title: Event Management

- Develop best practice in the development and delivery of successful conferences and corporate gatherings
- Study the key elements of a conference and the processes involved in venue selection, registration, catering, accommodation, transport, theming, security and entertainment
- Study management essentials such as developing budgets, critical paths, work breakdown structures, risk mitigation and contingency planning.

Course Title: Operations Management

- Be aware of basic concepts of Production management.
- Be aware of production planning control
- Understand the concept of plant location & layout
- Acquire knowledge about work and method study
- Acquire knowledge about quality control & types of inspection

Course Title: Human resource management

- Students get to understand concept, principles and practices of H.R.M.
- Students learn HR Planning
- Students are exposed to Recruitment and Selection Process through Practice work.
- Students practice cases with applicability of training and development, personnel record reports and audit

Course Title: Services Marketing

- The students will be able to know the theoretical and practical basis for service

Course Title: Customer Relationship Management

- The students would be able to identify the benefits of value creation for the customers. Gained an understanding of key concepts, technologies and best practices of CRM
- Be able to measure the customer equity and the importance of customer retention to the organization
- Be able to analyze the different processes and design the strategic framework for CRM integration in the existing functions of the organizations.

5. B.Com (Accounting & Finance) Program Specific Outcomes:

- To facilitate the basics of accounting and ascertain the financial position of the business
- To apply the business and economics concepts for managing the business
- To appraise various theories and principles of management for business development
- To compare various investment avenues for financial planning and wealth management
- To integrate the knowledge acquired over the period of study and thereby develop realistic
- Solutions to resolve business problems
- To enhance holistic development of personality with the humane outlook

B.Com (Accounting & Finance) Course Outcomes:

Course Title: Core Subject 1 – Financial Accounting

- Apply accounting techniques for bringing real business by using journal, ledger, cash book and trial balance
- Allocate common expenditures of the organization among various incomes and expenses by using final accounts
- Apply the errors of rectification which it is very useful in business.
- Evaluate the business events under different methods of depreciation
- Demonstrate a thorough working record of personal debtors and creditors are properly maintained.

Course Title: Core Subject 2 – Principles of Management

- Understand what should be done to accomplish given tasks and to handle situations which they arises in management.
- Establish the principles different approaches in modern school of thought
- Setup the objectives, target for formulating an action plan to achieve them.
- Invent the students about different types of organizational structure.
- Put ideas and concepts to work in co-ordination and controlling the organization.

Course Title: Core Subject 3 – Business communication

- Understand the basics of communication and its importance which aids in taking important business decisions in communication.
- Comprehend various channels of communication and can chart out various business letters with different layouts.
- Design and develop letters and resume by their own in relation to personal and Business correspondence.
- Prepare Internal and external business correspondence effectively such as letters to directors, shareholders etc.,
- Empower handling various modern forms of communication tools and even through social media and applications in the current business scenario.

Course Title: Core Subject 4 – Advanced Financial Accounting

- Apply accounting techniques for bringing real picture of business processes in Branch Accounting.
- Allocate common expenditures of the organization among various departments on appropriate basis
- Apply the accounting problems which it is very useful to maintain their accounts in Big Malls
- Evaluate the business events under different stages in the life of the partnership.
- Demonstrate a thorough working knowledge of the accounting in partnership organizations.

Course Title: Core Subject 5 – Banking

- To apply a thorough working knowledge of banks
- To Sketch the different activities of the banks
- To relate about the theoretical knowledge of bank account
- To illustrate the customer relations and grievances
- To apply the negotiable instruments in their future

Course Title: Core Subject 6 – Corporate Accounting

- Students would acquire knowledge regarding issue of shares at par, premium and discount.
- They got to know about how to pass journal entries regarding issue, forfeiture, calls in arrears, calls in advance and pro-rata allotment.
- Students are trained to prepare capital redemption Account and Balance Sheet as per Company's Act. They are made well-versed in the preparation of Pre & Post incorporation of Profit and Loss A/c and Balance Sheet.
- They would be given adequate practice in the preparation of Balance Sheet according to schedule wise.
- They would gain knowledge on valuation of goodwill under Average Profit, Super Profit, Annuity Method and Capitalization of Super profit method. They also know how to value
- Shares under Net Asset Method, Yield Method, Fair Value Method.
- They would be given knowledge on Alteration of Capital and Internal reconstruction.

Course Title: Core Subject 7 – Business and Corporate Laws

- Get practical knowledge about Contracts and agreement.
- Get the familiarity about the various types of contracts.
- Apply the principles of agency, sale of goods act in the business.
- Documents related to establishment of companies, Different types of meetings, Minutes of the meeting can be prepared by the students in their career.
- Understanding about shares & debentures, different types of meetings, minutes recorded in meetings can be handy for the students in their job career

Course Title: Core subject 8 – Practical auditing

- Get in depth knowledge about the concepts of auditing.
- Outline the steps involved in vouching, verification, valuation of assets and liabilities in the organization.
- View about the process of appointment procedures relating to auditors of the company.
- Recognize about the powers and rights, duties of auditor.
- Apply the computerized system of auditing methods in their business.

Course Title: Allied 3 – Security Analysis and Portfolio Management

- To Demonstrate a thorough knowledge on Investment area and kinds of investors.
- To Enlighten themselves on basics of stock exchange in India and the regulatory developments.
- To Empower themselves on handling various analysis for predicting stock price movements using fundamental analysis and Technical analysis.
- To Enlighten themselves on basics of fundamental analysis.
- To apprehend the basics of portfolio management using proven theories.
- To Comprehend the theories on capital market.

Course Title: Core subject 9 – Entrepreneurial Development

- Awareness will be created among the students about Entrepreneurship.
- Acquire different Sources of finance to start the business.
- Analyze the factors, Business ideas of selecting a business.
- Get the knowledge about Entrepreneurial Development Programmes.
- Relate the ED programme and economic development of the country.

Course Title: Core Subject 10 – Financial Services

- The lists of financial services are to be known by the Students.
- The various types of financial services and its process will be well-versed among the Students.
- The practical steps in leasing and factoring services can be identified by the students.
- Students are very familiar about Credit Rating Procedures.
- Student will able to understand about mutual fund investment

Course Title: Core Subject 11 – Business Taxation

- To understand the direct taxes and indirect taxes.
- To apply the procedure of central excise duty in their business
- To become well-versed in customs formalities
- To implement about the rules, regulations and procedures involved in VAT.
- To apply the service tax framework, conditions, valuations and payment involved for their business in the future.

Course Title: Core Subject 12 – Advanced Corporate Accounting

- Adequate knowledge about Amalgamation, Absorption, external reconstruction and preparation of Balance Sheet.
- Thorough knowledge about Holding Company and preparation of consolidated Balance sheet.
- Prepare Profit & Loss account, Balance Sheet according to schedules and Revenue Account for Insurance Companies.
- Imparted training in the area of liquidator's final statement of account and Final statement of Affairs List A to H
- Aware of what is Accounting Standards and how it is used in Accounts.

Course Title: Allied 4 – Business and International Economics

- Define the main concepts and describe the models and methods used in economic analysis
- Formulate real world issues in the language of economic modelling
- Apply and use economic models to analyze these issues
- Assess the potential and limitations of the models and methods used in economic analysis

- The student must be able to graphically depict a market in competitive equilibrium, recognize and list factors leading to a change in market demand and market supply, graphically depict the impact of the changes on the market, and verbally summarize the impact of the changes on the market.
- The student must be able to distinguish between a change in demand (supply) and a change in quantity demanded (supplied).
- To define the conception of consumer behaviour and reveal its importance in the context of marketing.
- To identify factors that influence consumer behaviour.
- To examine the consumer decision-making process.
- To describe the target market and determine the positioning strategy according to consumer characteristics and behavior
- Understand the general equilibrium relationship between factor endowments, the location of production, and international trade
- Use general equilibrium techniques to analyze a variety of issues in international trade including the links between trade and wage inequality and the effects of trade policy
- Understand the implications of imperfect competition, increasing returns to scale, and transport costs for patterns of international trade, the conduct of trade policy, and the location of economic activity in space
- Understand the working and applications of models of Foreign Direct Investment
- know some of the empirical evidence relating to international trade, the geographical concentration of production, and Foreign Direct Investment
- Use and adapt economic models to address key issues in international trade
- They will learn how international trade is affected by fluctuations in exchange rates

Course Title: Core Subject 13 – Professional Cost Accounting

- Get a clear picture about cost, costing, installation of costing system in an Industry Trained on how to prepare cost sheet, tender/quotation. So that they can prepare a tender/quotation for new business and Prepare records to be maintained for issue of materials under computerized environment.
- Imparted knowledge in acquiring Labour Cost, Labour Turnover and different types of piece rate system
- Prepare process account, contract account and operating statement for transportation.
- Understand the allocation of expenses and calculation of Machine Hour Rate.

Course Title: Core Subject 14 – Management Accounting

- To apprehend the basis of accounting and ascertain the financial position of the business
- To apply financial and economics concepts for managing the business
- To appraise the management concepts for business development
- To integrate the knowledge achieved over a period develop a solution for present day business problems individually
- To prepare cash flow statement and different types of budget.

Course Title: Core Subject 15 – Income Tax Theory, Law & Practice – 1

- To know the basic concepts of tax and to compute income under various heads.
- To charge income under the head salaries.
- To compute income under the head House property under the given circumstances.
- To calculate income under the head business and profession.
- To know the basic concepts under the Income Tax Administration Act and about Income Tax authorities.

Course Title: Core Subject 16 – Marketing Management

- The basis of marketing and its importance in today's scenario.
- Analyze the various factors consumers which impacts the buyers behaviour in purchase decision.
- Apprehend the various characteristics of product development and its life cycle, Branding and Packaging.
- Recognize the 4 P's of marketing i.e, Product, Place, Price and Promotion.
- Diagnose the various levels of distribution from manufacturer to retailers and consumer.

Course Title: Inter-Disciplinary Elective I – Indian Constitution and Human Rights

- To learn the fundamentals of the Indian Constitution and the rights & duties of the citizens of India
- To explore the three wings of the Government and the judiciary bodies
- To demonstrate the edifice of the Indian Governance & the electoral systems
- To comprehend the term human rights & its classification
- To appreciate the role of human rights commission worldwide and the role of educational institutions in promoting human rights

Course Title: Core Subject 17 – Advanced Financial Management

- To recognize the important functions of financial management and the various sources of finance.
- To analyze and formulate capital structure of an organization by using the concepts and theories on capital structure.
- To determine and report the cost of capital of an organization to facilitate business decision making.
- To interpret the dividend policies and can sketch dividend payouts of an organization.
- To explain and apply the techniques of capital budgeting to take decisions on project handling and make or buy decisions.

Course Title: Core Subject 18 – Income Tax Law & Practice – II

- To calculate income under the head capital gains.
- To compute income from other sources.
- To club the income and to set off losses and carry forward losses.
- To know the various deductions that is applicable while calculating income tax.
- To compute tax liability.

Course Title: Core Subject 19 – Working Capital Management

- To consume working capital optimally and ultimately to maximize shareholders wealth.
- To prepare and putting together, sources and uses statement in a good way to strategize on creative ways to finance the business startup or expansion.
- The company also has a better cash flow and higher availability of liquidity for use in
- investments and acquisitions.
- Manage the receivables in the firm and maintain the company's professional image, better cash flow and maintain the higher level of liquidity for use.
- Plan for management, inventory orders, inventory tracking, and inventory turnover.

Course Title: Elective 2 – Project Viva Voce

- To apply fundamental and disciplinary concepts and methods in ways appropriate to their principal areas of study.
- To demonstrate skill and knowledge of current information and technological tools and techniques specific to the professional field of study.

- To use effectively oral, written and visual communication.
- To identify, analyze, and solve problems creatively through sustained critical investigation.
- To integrate information from multiple sources.

Course Title: Elective 3 – Management of Human Resources

- To become familiar in the concepts of HRM
- To know about the different types of training methods applied by the organization in their workplace.
- To illustrate about the different types of remuneration and incentive systems prevailing in the organization.
- To manage and organized the industrial disputes, labor problems, trade union functions involved in the organizations.
- To conclude their detailed information about the HR Audit.

6. B.Com (Bank Management) Program Specific Outcomes:

- 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.
- This Course Familiarises The Students With The Subjects Related To Commerce Such As Financial And Corporate Accounting, Cost And Management Accounting, Corporate Laws, Financial Services With An Intense Emphasis On Banking Law And Practice, Banking Communication, International Economics, Global Awareness In Banking Systems And GST. This Course Also Focusses On Imparting The Much Needed Skills Like Communication Skills, Presentation Skills, Technical Skills, Etc., Through Specially Designed Skill Development Programmes.
- This Programme Is Designed To Develop The 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.

- The Programme Is Designed In Such A Fashion To Provide Ample Scope For Practical Exposure Through Internships And Projects For The Students Who Can Choose Not Only Banking Sectors For Employment But Also Accounting Sectors, Audit Firms As Well As Entrepreneurship.

B.Com (Bank Management) Course Outcomes:

Course Title: Financial Accounting

- Able to demonstrate the various basic accounting concepts and formulate the accounting Transactions such as Journal, Ledger, Preparation of Trial Balance
- Preparation of various types of cash book and compute final accounts with adjustments
- Compute and evaluate journal, ledger, trial balance and final accounts
- Outline the various depreciation concepts and compute the same. Explain the concept of insurance and create average clause.
- 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

- 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.
- 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.
- Able to Communicate the importance of planning and decision making and apply the same in managerial functions based on the process, types and functions.
- Outline the meaning and importance of staffing, recruitment and directing in an organisation.Demonstrate about various leadership styles like Authoritative, participative and delegation.
- 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

- Compile the role of money in all the three economics.
- Analyse the value and utilization of money in market.
- Utilize the existing factors impacting the money supply and write a plan to overcome it.
- Outline in the significance stages of business cycle.
- Design a plan to inculcate the positive traits of emotions in our day to day life

Course Title: Corporate Communication

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

- Discuss the significance of Banking Regulation Act, 1949 and role of RBI
- Analyse the concepts involving in banker and customer relationship.
- Compile the role of negotiable instruments such as promissory notes ,Bills of exchange, cheques, etc
- Explain the different forms of E-Banking operations along with the benefits over normal banking operations
- Analyse various forms of customer grievance redressal mechanism

Course Title: Theory of Money and Banking

- 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.
- 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.
- Compile the functionaries of exchange and discuss about exchange market and rate of exchange. Able to demonstrate about the exchange control.
- 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.
- 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

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

Course Title: Corporate Accounting

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

Course Title: International Economics

- Explain about International economics and international trade, its scope and Importance for economic development. Demonstrate the various theories and growth pertains to international trade.
- 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.
- Discuss on Export Management its procedures and various documentations. Pertaining to export procedure, promotion, pricing and finance.
- Demonstrate about various International Economic Organizations such as IMF,IDA,IFA,IBRD,ADB,UNCTAD,UNIDO and its Functions
- 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

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

Course Title: Advanced Corporate Accounting

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

Course Title: Management Accounting

- Explain about management accounting and its difference with cost accounting and financial accounting.

- Compute and analyse various financial statements using comparative, common size and trend analysis
- Evaluate and analyse different ratios such as liquidity, profitability and turnover and demonstrate its use for management.
- Analyse and compute funds flow statement, preparation of working capital statement and funds from operation.
- 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

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

Course Title: Financial Management

- Outline the meaning, objective and Functions of financial management which are essential to perform the role of financial manager in current scenario.
- 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
- Create and design the optimum capital structure with using the cost of appropriate proportion of equity, preference capital, and debt and retained earnings.
- 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.
- Evaluate the Working Capital Management and compute the various components working capital operating cycle.

Course Title: Customer Relationship Management

- Discuss the concept of customer relationship management.
- Compare the different modes of communication channel along with the advantages.
- Access the barriers prevailing in communication with respect its inter and intra personnel communication
- Prepare a business letter-communicating its fill up the existing vacancies in an organisations
- Explain the outcome of talwar and[701poria community]

Course Title: Practical Auditing

- To explain about Audit types, audit planning and working papers
- To analyse the Importance of vouching of cash receipts payments
- Outline about Appointment of auditors and their removal
- To assess the Rights duties and of an auditors
- An outline about EDP audit and types of online computer systems

Course Title: Management of Human Resources

- Discuss the significance of Human Resource Management along with the methods of selection process.
- List out the training techniques and its effectiveness of traditional and modern methods.
- 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 .
- Explain the outcome of functions of trade unions, and its types and effectiveness.
- Discuss the Industrial Disputes and Settlements [laws excluded]

Course Title: Cost Accounting

- To explain the concepts and classifications, installation of costing systems
- To demonstrate about the cost sheets, reconciliation of cost and financial accounts
- To explain the concepts on material purchase EOQ, ABC analysis, VED, and issue of materials -FIFO, LIFO,HIFO,SAM,WAM.
- To design about the labour cost method of wages payments and payroll procedure
- Analysis of overheads, classifications, allocations and absorptions

Course Title: Entrepreneurship Development

- Discuss about the basic concept and functions of entrepreneurship, the various types and classification of entrepreneurs and factors that influence entrepreneurship.
- Outline the various Entrepreneur development agencies and financial institutions prevailing in India and the schemes to develop entrepreneurship.
- 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.
- Explain about the various Entrepreneurial development programmes, role and achievements by government on the same.
- Communicate about the various role entrepreneurial growth with respect to Economic development
- 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

- Illustrate the concepts and competencies of emotional intelligence.
- Describe the significance of psychological needs.
- Discuss the negative traits of emotional along with the solutions.
- Design a plan it's indicate the positive traits of emotions in our day its day life.
- Apply the outcome of self-analysis with its benefits.

Course Title: Advanced Financial Accounting

- Explain the types of branches, branch accounts.
- Compile the basis for allocation of expenses need for deposit account
- Evaluate the hire purchase trading account, purchase system
- To Compile the admission of partner, retirement
- Outline the concepts of involving dissolution and insolvency of partnership act(1932)

Course Title: Business Taxation

- Learn significance of Business Taxation in Historical and current scenario
- Taxation concepts in the practical applications of Business Taxation

- Learn the basic scenario with respect to classification of goods and its valuation under customs act.
- Thorough knowledge on the Business Taxation's important topics
- Concepts on Import and exports, GST, and learn the aspects of it

Course Title: Credit and Risk Management in Banking

- Outline of Bank credit, – types of securities & legal documents, RBI directives & Various committee
- Explain the access of lending to Different Customers
- Demonstrating the Loan Processing – Sanctioning – Monitoring – Recovering Commercial Loans
- To Assess the balance sheet, profit loss, cash flow and fund flow and project approach
- To plan & evaluate the remedial measure, debt recovery tribunals, management NPA

Course Title: Income Tax Law and practice (1)

- Analyse the features of income tax act and its significance
- Compare the unique features of terms such as Heads of Income, Salaries, Allowance.
- Discuss the concept of the house property annual value and the computation of income.
- Compare the different types of barriers in business or profession, allowable and non-allowable expenses.
- Explain the signification of Income tax authorities such as CBDT, PAN, etc.

Course Title: Income Tax Law and practice (2)

- Compile the significance of different terms such as income under capital gains and indexation of cost under various circumstances.
- Describe about the income from the source along with reduction in computing the income
- Apply the in clubbing of income and the implication in set of losses.
- Illustrate about the permissible deduction from gross total income SEC 80C, 80CCC, 80CCCD
- Discuss the assessment of individuals in computation of tax liability

7. B.Com (General) Programme Specific Outcomes:

- Accomplish their goals towards the need for current business scenario with their equipped contents in the financial affairs of the business.
- Manage the purity of business transactions with ethics through the gained knowledge in the field of Accounting and Auditing.
- Position themselves in determining and managing Costs, Revenue, Pricing and budgetary techniques through effective management accounting expertise
- Proficient in handling tax filing systems, GST and other Legal Procedures required for business environment.
- Empower to locate themselves in the competitive business scenario with the acquired communication skills, Marketing skills and Professional Development skills.
- Make pro-active decisions pertaining to business solutions with regard to application of economic principles and techniques at micro and macro level.
- Initiate and sustain entrepreneurship as a career by the well-built competencies acquired.
- 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

- Recalls the basic concepts, conventions and accounting process.
- Enables the students to prepare financial statements in accordance with appropriate standards.
- Determines the useful value of the life of Assets in the business
- Familiarizes the students in managing their business loss through insurance claims
- Distinguishes the two system of accounting and enables to summarize the necessary statements.
- Outlines the overall functions of Financial Accounting in business.

Course Title: Business Communication

- Describes the dimensions, methods and the barriers to communication
- Outlines the preparation of various official communications
- Elaborates the several essential business correspondences

- Details the process of communication with community towards banking and insurance
- Enables the students to outlay the different required reports needed for business
- Acquaint with knowledge on all business correspondences

Course Title-Economics for Business Decision

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

Course Title- Financial Accounting –II

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

Course Title - Principles of Management

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

Course Title - Indian Economic Development

- Develop ideas of basic characteristics of Indian Economy and its potentials
- Acquiring knowledge about computation of National Income
- Examines the causes and impact of major problems of Indian Economy

- Justify agriculture as the foundation of economic growth
- Discuss the changing nature of industrial sector and its contribution
- Predict the Indian economic development through Planning undertaken by Govt. of India

Course Title - Corporate Accounting –I

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

Course Title – Business Laws

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

Course Title – Banking Theory Law and Practice

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

Course Title – Marketing

- Recalls the functions and importance of Marketing Management
- Analyse the consumer buying behavior in Marketing environment

- Examine the product mix and pricing strategies
- Identify the channels of marketing communication
- Familiarize with the latest trends on e- marketing
- Enhance the marketing skills of students for effective business performance

Course Title – Business Statistics

- Explains the methods of collection of data
- Classify and represent the data into required tables and charts
- Complete the analysis of measurement of central tendency
- Examine the skewness of data symmetry
- Estimation of future values through trend analysis
- Relate the data with needed information

Course Title–Corporate Accounting –II

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

Course Title–Company Law

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

Course Title–Goods and Services Tax and Customs Law

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

Course Title–Financial Services

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

Course Title–Advanced Statistical Methods

- Describe the Index numbers and cost of living index
- Familiarize with the usage of Probability distributions
- Analyse the different sampling techniques
- Examine the testing of Hypothesis
- Compare and contrast the variables through Correlation and Regression analysis
- Utilize the statistical tools on Economics and Business decisions.

Course Title– Cost Accounting

- Familiarize the concepts of cost accounting
- Enhance knowledge on preparation of cost sheets in real time business
- Facilitate the students to manage the material purchase control
- Assess the Labour wage rate management system
- Construct the allocation and apportionment of overhead cost
- Invent the installation of costing system.

Course Title– Practical Auditing

- Investigation into an overview of auditing procedures
- Enhancing the knowledge on vouching, valuation and verification process
- Categorise the provisions relating to depreciation and reserves
- Acquire knowledge on the appointment, remuneration and removal of auditors
- Synthesises the auditing procedures towards specialized audits
- Recommend the students to take up auditing in a professional way

Course Title– Entrepreneurial Development

- Create and develop entrepreneurial attributes among the students
- Outline entrepreneurial development agencies and their services
- Empower the students regarding functions of SSI
- Facilitate the students for converting feasible business idea into successful business proposals
- Discuss about the EDP's to make the students as real entrepreneurs
- Empower the women towards Start – ups

Course Title–Financial Management

- Expose the students on the role of finance
- Investigate into the different cost attached with investments
- Demonstrate the structuring of financial plans
- Assess the different dividend models
- Application of working capital management strategies
- Enhance the management skills on the flow of finance in business

Course Title–Income Tax Law & Practice-I

- Enlighten the basic concepts of direct taxation
- Prioritize the computation of various components of salary
- Assess the income from house property
- Synthesis the provisions relating to income from business or profession
- Construct the filing of returns
- Empowers the practical exposure on income tax provisions

Course Title–Advanced Cost Accounting

- Describe the computation of Job and Batch Costing
- Construct the preparation of contract costing
- Facilitate the assessment of process costing
- Evaluate the methods of operating costing of service sector
- Expose students of various applications of marginal costing
- Acquisition of versatile costing knowledge and its techniques

Course Title–Management Accounting

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

Course Title–Business Environment

- Overview of concepts of Business Environment
- Familiarize the Government and business relationship in India
- Inspect the social responsibilities and analyse the cultural environment of business
- Assess the economic environment and its impact on business
- Compose the determinants to technological environment of business
- Scan the business environment to improve the business performance

Course Title–Income Tax, Law & Practice-II

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

Course Title–Human Resource Management

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

Course Title – NME - Basics of Retail Marketing

- Describe the importance of Retail Marketing
- Examine the functions of retailing
- Illustrate labelling and franchising of retailing.
- Identify various retail communication tools
- Discuss the Supply Chain Management.
- Explain the role of Information Technology in Retailing

Course Title–NME- Fundamentals of Business Insurance

- Recall the history and principles of Insurance
- Find the various insurance agencies available
- Examine the role of IRDA in insurance field.
- Discuss the fundamental principles and policies of Life Insurance
- Explain the principles and concepts of Fire Insurance.
- Familiarize various Marine Insurance schemes

8. B.Com (Corporate Secretaryship) Program Specific Outcomes:

- 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.
- Students have the skill to pursue professional courses such as ACS, CA and CMA.
- Pursue post-graduation like M.COM, M.COM C.S, M.COM Accounting and Finance and other related courses.
- Student can become entrepreneur by starting own business.

- Student can establish their own consultancy as GST Practitioner for online registration, Tax filing, TDS/TCS etc.
- 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.
- Appear for CAT exams on successful completion of which pursue MBA in reputed business schools.
- Students can pursue banking exam and enter in to banking sector.

B.Com (Corporate Secretaryship) Course Outcomes:

Course Title: Core I: Financial Accounting –I

- Discuss the fundamental features and need for making adjustments while preparing final accounts of a sole trader.
- Compile Accounting procedure for the Non Trading Concern , ascertain the Cash position and surplus/deficit of the Non Trading Concern
- Demonstrate and Analyses the changes in the Current Account and also the Due Date on which the payment to be made.
- Compare and analyses the various methods of depreciation, and to ascertain the book value, profit and loss on the assets.
- Outline the incomplete system of accounting (Single Entry), Understand the steps involved in conversion of single entry system into double entry book keeping.

Course Title: Core II: Human Resource Management

- Explain about the importance of Human Resource Management and its Processes that are concerned with various management activities and to run an effective organization.
- Outline of different methods and technique of training and Performance Appraisal that are used in an organization.
- Assess the different methods and technique relating to administration and to retain the human resources.
- Discuss the various mechanisms in HR environment that to capable of applying the principles and techniques as professionals for developing human resources in an organization.

- Predict the different faces of executives and preparing policies and practices based on it and also Human Resource audit.

Course Title: Allied I: Corporate E-Management

- Outline introduction to computer, classification and its uses in business.
- Discuss the Operating System, Hardware & Software and computer networks
- Demonstrate a basic uses of Internet, E-mail in current scenario and be aware of concepts like domain name & IP address in various organization
- Identify the basic concepts & elements of Multimedia and their use in both education and entertainment.
- Communicate the legal framework of E – Commerce and assess the various modes of Electronic Payment system

Course Title: Core III: Advanced Financial Accounting

- Demonstrate the accounting procedure for Branch Accounts under debtors system and stock & debtors system.
- Outline for preparation of Departmental Accounting, Inter departmental transactions, Allocation of expenses between the Departments.
- Explain the concept of Hire purchase transactions, calculation of interests and various accounting treatments of Hire purchase & Installments system
- Compile the accounting procedure for admission and retirement of partnership , treatment of goodwill
- Analyze the accounting treatment of death of a Partner , executors account
- Discuss the various procedures for accounting treatment of Dissolution, Garner Vs Murray, piece meal distribution

Course Title: Core IV: Company Law and Secretarial Practice – I

- Outline the knowledge about the provisions of the Companies Act 2013.
- Utilize the legal procedures relating to the formation of a company.
- Selection of various sources like shares and debentures to raise the capital of a company through the issue of the prospects.
- Demonstrate different kinds of capital, company and its objectives.
- Communicate the students to differentiate the meaning regarding members and shareholder of a company and the powers subject to them.

Course Title: Allied II - Business Communication

- Discuss the importance and essentials of communication in business activities.
- Outline to draft the various types of business letter and to practice the same.
- Demonstrate the various types of business enquiries.
- To compile the different types of correspondence relating to the company and secretarial practice.
- To utilize the knowledge about the vital role played by computer in business entities.

Course Title: Core V- Corporate Accounting – I

- Prepare the journal entries of issue of shares and compute underwriters liabilities
- Demonstrate thorough knowledge of relevant accounting treatment of redemption of preference shares and the ability to find the profit prior incorporation of a companies.
- Demonstrate thorough knowledge to preparation of financial statements of companies as per the provisions of companies act 2013.
- Select the appropriate methods of valuation of shares and goodwill and perform the accounting treatment of the company.
- Learn about the concepts of various procedures for alteration of share capital and accounting treatment in respect of internal reconstruction of a company

Course Title: Core VI: Company Law & Secretarial Practice – II

- Compile the knowledge about the various provisions of Borrowing powers, debentures and its types, Secretarial duties relating to Borrowing powers.
- Outline the legal procedures relating to the types, Appointment, functions, duties, powers, remuneration of the Directors and Key managerial personnel and their appointments, Secretarial duties relating to appointment of directors
- Demonstrate the provisions for conducting the meetings of the companies, elements of valid meeting, resolution, and voting methods. Secretarial duties relating to conduct of meeting
- Explain the concepts about the role of an auditor, different kinds of Audits, and their objectives, provisions for payment of dividend, and books of accounts. Secretarial duties relating to maintenance of books of accounts
- Analyze the causes and circumstances of winding up and differentiate a Compulsory and Voluntary winding up of the company.

- Discuss the concept of liquidator, functions, powers, duties and Secretarial duties relating to winding up

Course Title: Allied III: Statistics – I

- Communicate the origin and basics about the statistics.
- Analyze the knowledge of measures of central tendency – Mean, Median, Mode, Geometric Mean and Harmonic Mean.
- Explain the characteristics of the range, Quartile deviation, mean deviation, variance, and the standard deviation.
- Evaluate the measures of skewness – Karl Pearson’s coefficient of skewness and Bowley’s Coefficient of Skewness.
- Analyze the properties of Probability and its applications

Course Title: Core VII: Corporate Accounting – II

- Describe the accounting concepts and policies related to accounting standards and identify the relationship for financial reporting purposes.
- Demonstrate a thorough knowledge of relating accounting treatment and the ability to apply them to solve banking companies financial statement based on Indian accounting standard
- Discuss the accounting procedure of amalgamation of companies and to give comprehensive understanding of all aspects relating to corporate requirements
- Analysis the accounting procedure of absorption & external reconstruction of companies and to give comprehensive understanding of all aspects relating to corporate requirements
- Demonstrate a thorough knowledge about the procedure of preparing liquidator’s final statement of accounts at the time of winding up of the companies.

Course Title: Core VIII - Goods Service Taxes & Customs Laws

- Discuss the classification and methods, tax system in India, Objectives of taxation, and Cannons of taxation.
- Outline the Concepts, Definitions and Types of Custom duties.
- Explain the Various assessment procedures and valuation of goods, Clearance of goods.
- Understand the Prohibition of Importation and exportation of goods under customs act, powers of various customs officers.

- Demonstrate the applicability and non-applicability of GST, Exemptions, role of GST Council.
- Discuss the provisions and rules relating to Supply, Types of goods, and Input Tax credit under GST.
- Compile the various provisions and Importance for Registration, Cancellation.

Course Title: Allied IV: Statistics – II

- Discuss the scope of Karl Pearson’s Coefficient of correlation and Spearman’s Rank correlation.
- Discuss the scope of regression and use of regression analysis to estimate the relationship between two variables and its applications.
- Enable the students to acquire sound knowledge of concepts, methods and techniques of sampling techniques.
- Analyses the use of time series models for forecasting and the limitations of the methods.
- Utilize the necessary set of skills in using statistical tool and technique of index number for price level changes.

Course Title: Core IX: Management Accounting

- Enable the students to acquire sound knowledge of concepts, methods and techniques of management accounting.
- Apply the analytical skills associated with the interpretation of accounting reports.
- Evaluate the results of profitability, liquidity, solvency and efficiency levels in the business
- Communicate the knowledge about fund flow and cash flow statements under (AS-3) and also the concept of budgetary control
- Outline and evaluate the absorption and marginal costing methods for various decision-making situations.

Course Title: Core X: Securities Law & Markets Operations

- Discuss the Basic Knowledge of SEBI Guidelines for new issue market and investors protection on it.
- Describe the role of stock market and the various role played by its intermediaries.
- Demonstrate the functions of Stock Exchange, mechanics, types and also listing of Securities.

- Preparing the concept about trading pattern in OTCEI, NSE and other Index numbers.
- Formulate an idea about the Demat Trading, and Mutual funds.

Course Title: Core XI: Income Tax Law & Practice-I

- Identify the basic concepts and principles of income tax law & practices
- Analyze the various provisions contained in sections 15,16 and 17 of income tax act, 1961 under the income from salaries of individuals
- Outline the various important provisions in sections 22 to 27 of income tax act, 1961 under the head income from house property
- Compute the taxable income under the head, profit and gains of business and profession under section 28 to 44
- Demonstrate the procedure of assessment, appeals and revisions relating to the administration of income tax act 1961

Course Title: Core XII: Commercial & Industrial Law

- To revise the Important Concepts and terms in Business law and Classifications of Indian Contract Act
- To outline the Knowledge of the essential elements of contracts, Capacity of Parties, Performance of Contract, Breach of Contract and its remedies
- To discuss the Knowledge about Bailment, Pledge, Indemnity and guarantee and its differences.
- To demonstrate the Factories Act 1948, and women empowerment.
- To analyse the Industrial Disputes Act

Course Title: IDE Subject: Entrepreneurial Development

- Discuss the concept of entrepreneurship and its importance.
- Analyze the scope of various financial institutions for the enhancement of small entrepreneurs.
- Utilize the various technical tools for the business premises and encounter business ventures.
- Communicate the important values of EDP's and the government role played in.
- To design the valuable approaches in the changing economic scenario and to apply the same for the improvement of small scale entrepreneurs.

Course Title: Core XIII: Cost Accounting

- Compile the basic concepts used in cost accounting.
- Outline about the basic principles of materials control and the latest techniques in inventory control.
- Explain the classifications of the overheads, and Distribution of Overheads Under Primary and Secondary distribution.
- Evaluate the various surfaces of labor cost control, various methods of remuneration and calculation of wages.
- Demonstrate the transactions and preparations of accounting entries for unit costing, process costing, operating and operation costing.

Course Title: Core XIV: Financial Management

- To understand how crucial financial decisions are taken in a firm and gain insight into wealth maximization and profit maximization.
- To understand the cost of capital, importance of leverage and capitalization.
- To Demonstrate the Theories of capital structure.
- To formulate dividend decisions in a firm.
- To select and apply techniques for short term financial needs of the firm using working capital management concepts.

Course Title: Core XV: Income Tax Law & Practice-II

- Compute Income from Capital Gain” under section 45 to 55, and analyses the various exemptions under the capital gains
- Analyze the various provisions contained under section 56 to 59 of the Income tax Act, 1961 under the heads “Income from Other Sources”
- Outline the various provisions relating to “Aggregation of income” and “Set-Off and Carry Forward of Losses”
- Prepare gross total income and analyses the provisions under section 80 C to 80U relating to individuals
- Compile the procedure for computation of tax on income for assessment of individual for the current assessment year under the income tax act.,1961.

Course Title: Core XVI: Corporate Governance

- Discuss the various corporate sectors and their functions, Elements of good corporate governance, Governance manual.
- Demonstrate the shareholders vs stakeholders approach and welfare of stakeholders
- Outline the due diligence, functions , advantages, guidelines for issue of Initial public offer(IPO),Sweat equity shares & Employee stock option scheme (ESOS) ,
- Demonstrate the various committees and their functions which are prevailing in the corporate sector/Companies Act 2013.
- Explain the various Corporate social responsibilities (CSR) Practices & Social Audit and its importance.

Course Title: Application Oriented: Institutional Training

- Acquire institutional experience the nature of schools as workplaces and their associated values, routines and cultures
- Demonstrate professional skills that pertain directly to the institutional experience
- Analyse the various department activities and their responsibilities.
- Formulate the organization structure, layout.
- Describe the organization's financial statement analysis.
- Prepare the report based on the training experience

Course Title: Non – Major Elective: Fundamental of Insurance

- Discuss the history of insurance and its scope and advantages
- Revise the types of insurance, its profile and its functions.
- Utilize the life insurance methods, its polices, principles and its types.
- Describe the meaning of fire insurance, its principles, features and its types.
- Communicate the term about marine insurance, its uses , police and types of it.

Course Title: Non – Major Elective: Introduction to Financial Market & Investments

- Discuss an overview of money markets, its features, constituents and its reforms.
- Demonstrate the differences between money market and capital markets.
- Explain about Indian stock mark and its types.
- Discuss share market and its functions
- Communicate foreign exchange markets, government securities markets and demat procedures.

9. Department of B.Com (Honours) Programme Specific Outcomes:

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

Department of B.Com (Honours) Course Outcomes:

Course Title: Financial Accounting I

- To study the accounts and the use of trading account, profit and loss account and Balance Sheet
- To analyze the receipts and payment account using credit and debit transaction
- Comparison of maintaining cash book and pass book
- To explain Depreciation using Straight Line and WDV method
- To study the book-keeping method, one sided accounting and entry for Financial management

Course Title: Marketing Practice

- Outline on marketing practices according to the changes in the market's trends
Understanding the internal and external factors prevailing in the marketing environment
- Applying the changing tastes, preferences and attitude of consumers towards the market
- Analysing the 4 P's of marketing (price, product, promotion and place) in the marketing mix
- Ascertaining the changes in technology due to change in trends in the market

Course Title: Principles of Management

- State the process of dealing with or controlling things or people
- Illustrate the process of making plans for something
- Classify the process involves assigning tasks, grouping tasks and allocating resources across the organizations
- Analyze the management or guidance of someone or something
- Evaluate the set of some sequential steps involved in transferring message as well as feedback

Course Title: Business Economics

- To familiarize with the nature of business economics and its components.
- To apply the concept of opportunity cost.
- To employ marginal analysis for decision making.
- To interpret and analyze operations of market under varying competitive conditions.
- To integrate the concept of price and output determination of firms under various market structure.
- To assimilate about the consumer behaviour in marginal utility.
- To rationalize the concept of production and law of variable proportion, law of returns to scale.
- To comprehend the concept of Economies of scale and Break-Even analysis.
- To deduce the knowledge on National income, National product.
- To contemplate the importance of Economic Welfare, Public Finance and Expenditure.

Course Title: Corporate Accounting

- An introduction of company, Issue of shares and debentures using underwriters.
- Acquiring knowledge to merge the companies.
- To analyse the financial statement of joint stock companies according to Companies ACT 2013.
- An insight into alteration of Share capital (revaluation of assets and liabilities).
- To study about the liquidators remuneration at the time of voluntary winding-up by the company.

Course Title: Business Law

- To assist the students to learn the elements of general contract.

- To enable the students to understand and deal with various contracts in his/her day-to-day life, be it for his business or profession.
- To facilitate the students community to learn and understand the special contracts.
- It's important for students' community to have a basic understanding of business law to help them make better decisions.
- To describe an overview of Commercial law and sales of consumer goods Act., with the aim of to construct business contract

Course Title: Business Mathematics

- Recall theory of sets, its definition, elements, types etc
- Explain binomial, exponential and logarithmic series
- Apply basic concepts of differential calculus (Limits and continuity)
- Differentiate permutation, combination, ratio, proportion etc
- Assess interest rates, discounts, matrix inversion etc.

Course Title: Financial Services

- An overview of financial instruments
- To analyse the ability of firms to fulfil the financial commitments like short term debts
- To know and study about the debtors finance, leasing, forfaiting and guarantee of compensation
- The detailed information about commercial loans, investment, underwriting, and loan services etc.
- To acquire knowledge about financial practice of pooling various types of contracts, interest bearing securities.

Course Title: Logistics and Supply Chain Management

- Study on the various functions of logistics management
- Explaining the process or work flow associated with order processing
- Applying the techniques and management principles in transporting goods
- Determining the system of records and repairs used to make logistical decision and manage supply chain
- Ascertaining the need of legally binding document between a shipper and carrier

Course Title: International Trade

- To have an insight & its importance about international trade.
- To impart adequate knowledge about Balance of Trade, Balance of Payment.
- To provide skills on exchange rates, euro dollar marketing.
- To comprehend about the export procedure and documents.
- To identify the sources of export finance and insight about export pricing.
- To gain knowledge on import procedure and documents, import finance.
- To decipher about the international economic organizations – IMF, IDA, IFA, IBRD, ADB, UNCTAD, UNIDO.

Course Title: Corporate Ethics and Governance

- Outline on the concept of corporate ethics
- Describing the meaning and need of ethical management in an entity
- Applying companies social responsibility towards society and its stakeholders
- Examining the need and role of corporate governance
- Ascertaining the powers and functions of statutory body – SEBI

Course Title: Income Tax Law and Practice

- To introduce the students to the concepts of Income tax and to categorise individuals in order to residential status in India.
- To determine filing status and understand the calculation of tax according to filing status.
- To provide an insight into the different heads of income and the authorities under the Act.
- To compute the different heads taxable income under income tax.
- To appraise the number of exemptions and the exemption amounts for taxpayers.
- To precise standard or itemized deduction amount for taxpayers under five heads of income tax

Course Title: Accounting Standards

- Define accounting standards, its meaning, benefits, standard setting process etc
- Describe AS 1 (manner of disclosure of accounts , its deviations)
- Application of AS 2 (valuation of inventory, its methods)AS 3 (cash flow statement and its methods)
- Analyze AS 5(net profit or loss for the period) AS 6(depreciation accounting), AS 9(revenue recognition), AS 10(fixed assets)
- Deduce value of investments from AS 13, amalgamation and its types from AS 14 etc

Course Title: Practical Auditing

- Identifying the difference kinds of audit
- Interpreting the plan and conduct of audit
- Applying evidences for Audit sampling
- Analysing the roles and responsibilities of company auditor
- Ascertaining the importance of audit report and its types

Course Title: Research Methodology

- To acquire knowledge about research, types of research.
- To articulate the research problems.
- To frame hypothesis, and able to test the hypothesis.
- To impart knowledge about the sampling techniques.
- To know the possibilities of sampling error.
- To apply measurement & scaling techniques.
- To employ data collection methods, testing validity & reliability.
- To educate the processing of data with statistical analysis (SPSS).
- To provide hands on training on report writing, drafting of report.
- To know the preparation of different types of report, style & conventions in reporting.

Course Title: Financial Accounting II

- To study and apply on hire purchase and instalment purchase
- To enumerate the hiring products on small and big value of money
- To explain the head office and branch accounts and maintain too.
- To know and acquire the knowledge of partners admission, retirement and death of partner
- To impart the knowledge of insolvency of partners and dissolution of partnership firm
- To know and study the basics of tally

Course Title: Banking Theory and Practices

- To expose students to the concept, importance and dynamics of banking business.
- To prepare the students to know the theoretical framework of functioning of banking sector.
- Handson skills in using - Internet banking – funds transfers – ATM & knowing about the electronic money, also the risk management in e-banking.

- How to open a bank a/c, know about the types of bank a/c – To fill in the pay-in slip
- To impart knowledge about negotiable instruments, crossing a cheque, etc., endorsement, to know about duration and rules.
- To know the meaning of collecting banker their statutory protection, bill of exchange.
- To extrapolate a view towards customer grievances and grievance redressal.
- To have a clear idea of Banking Regulation Act.
- To apprehend about the banking Ombudsman.

Course Title: Service Marketing and Customer Relationship Marketing

- Study on introduction of service marketing with its classification
- Interpreting the different service marketing mix and its objectives
- Applying different promotion mix in service marketing
- Analyses on relationship management between consumers and service providers
- Combining the different relationship management concept with different service marketing techniques

Course Title: Business Policy and Environment

- To provide an overview and familiarize with the nature.
- To impart practical knowledge and analysis of SWOT & SAP.
- To intuit the global environment and decode the strategies for globalization.
- To decipher the agreements and current issues in Business Environment and IPR.
- To discern the Corporate Communication and make out the Social Networking.

Course Title: Business Statistics and Operations Research

- Outline on the various methods of calculating the Mean, Median and Mode
- Understanding the widely used mathematical method wherein the numerical expression is used to calculate the linear related variables
- Applying study on the series of values of a quantity obtained at successive times, often with equal intervals between them
- Analysing the method of mathematically based analysis for providing a quantitative basis for management decision
- Evaluating on assigning sources and jobs to destinations and machines

Course Title: Insurance and Risk Management

- To study on how to handle a risk, to identify monitor and to manage the risk.
- In order to reduce the negative impact on organization
- To identify the commercial risks and to know the different policies and contracts.
- To impart the knowledge on compensation paid by the employer and the employee
- To study the importance of privatizing the insurance business in India
- The overview of risk management techniques and tools towards loss of life, health, and retirement planning

Course Title: Special Accounts

- To familiarize the procedure for valuing the goodwill and shares of Companies to acquire a business.
- To understand the different types of assets with the intention of amalgamation or absorption.
- To compute the accounting treatment for holding and subsidiary to path the company after the acquisition.
- To analyse the different schedules practiced by the banking company accounts in India as well as insurance company
- To Evaluate the different types of insurance- life insurance and general insurance

Course Title: Company Law

- Defining the facts or condition of being with another or others, especially in a way that provides friendships and enjoyment
- Explaining the formal documents that is required by and filed with the SEC that provides details about an investment offering for sale to the public
- Classifying the money invested in a company by the shareholders
- Analysing the relationship of a person who has signed the memorandum of association with the company
- Evaluating the process of planning, organizing, leading and controlling the efforts of company members

Course Title: Financial Management

- A brief analysis on meaning, scope of FM and roles of Finance manager and to know time value of money.

- To perceive different decision making tools like cost of capital, leverages and capital structures.
- Importance of Return on Investment (Capital Budgeting) and its techniques.
- Be aware of payout ratios retained earnings and capital for daily workings.
- Get to know different type of markets for financial instruments.

Course Title: Entrepreneurial Development

- To prepare, nurture and establish an entrepreneurial mindset.
- To motivate and develop women entrepreneurs. To overcome the problems of women entrepreneurs.
- To explore business idea, develop a business plan.
- To create new ventures and do a feasibility analysis, develop a project report.
- To know about the institutional finance and commercial banks are sources of finance.
- To identify the entrepreneurial development programs – Role of government, Imparting knowledge.

Course Title: Income Tax law and Practice- II

- Define and listing out income from capital gains, exemptions, computation
- Describe income from other sources and computing deductions under this head
- Classify the income and applying the clubbing provisions
- Distinguish different sub sections of 80 and using it in assessment of individuals
- Conclude this different heads by learning the powers, judgments of CBDT

Course Title: Cost and Management Accounting

- To understand and analyse financial statement to help in managerial decision making
- To prepare statements like Cash Flow, Budgets etc., so as to assist the managements to take meaningful and correct decisions.
- To learn the various tools and techniques in cost control like variance analysis and budgetary control.

Course Title: Human Resource Management

- Study on the managerial and operational functions of Human Resource management
- Understanding the work environment with placement and production in order
- Applying remuneration to employee in order to motivate them and their efforts

- Analysing the collective bargaining of employees to protect the interest of worker
- Ascertaining the human resource audit in order to receive every aspect of management of HR and efficiency in maintaining document and legal compliance

Course Title: Security Analyses and Portfolio Management

- Outline on the nature and scope of investment
- Explaining the favourable and feasible conditions for investment
- Applying the components in order to analyse the company
- Analyses on the portfolio management in order to analyse and balance risk against performance
- Evaluating the returns and risks involved in securities using capital market theory

Course Title: Business Taxation

- To study the taxation reform in the history of Indian economy.
- To explain students with the basic concepts of direct tax and indirect tax
- To enable the students to understand the procedure for computation of various indirect taxes.
- The key purpose to learn simplified process taxation compliance under the GST regime.
- To analyses the different type of taxes imposed by the government of India after the implementation GST.
- To conceive the different type's customs duties imposed under the customs Act. 1962 and to define goods under the customs Act.

10. B.COM (Information System Management) Program Specific Outcomes:

- The students can get the knowledge, skills and attitudes during the end of the B.com degree course.
- 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.
- 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.
- The students will acquire the knowledge, skill in different areas of communication, decision making, innovations and problem solving in day to day

business activities.

- Students will gain thorough systematic and subject skills within various disciplines of finance, accounting, management, communication, computer programming and systems.
- 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.
- Students will learn relevant Advanced accounting career skills, applying both quantitative and qualitative knowledge to their future careers in business.
- 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:

- To enable the students to learn principles and concepts of Accountancy.
- Students are enabled with the Knowledge in the practical applications of accounting.
- To enable the students to learn the basic concepts of Partnership Accounting, and allied aspects of accounting.
- The student will get thorough knowledge on the accounting practice prevailing in partnership firms and other allied aspects.
- 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

- To develop knowledge about evolution of management thoughts.
- To better understanding of planning and decision making
- To give an idea about organisation structure and different types of organisation
- To make them familiarize with recruitment process and stages in selection
- To provide idea about motivation, importance of communication and Principles of coordination.

Course Title: Basic Computer Skills for Managers

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

Course Title: Business Communication

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

Course Title: Cost Accounting

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

Course Title: HTML Programming

- To familiarize students with the tags and works on with basic html programs.
- To make students work with adding graphics to html and also different attributes.
- To make students understand the concept of linking of documents using hyperlink and also external document reference.
- To introduce the concept of dynamic HTML
- TO make students create a form using html tags.

Course Title: Importance of Emotional Intelligence

- Demonstrate emotional intelligence and realize the benefits of high emotional intelligence at workplace.
- Increased self awareness by identifying personal patterns.
- Ability to positively handle negative traits.
- Analyse positive traits and apply them in workplace.
- Demonstrate SWOT analysis and create the art of celebrating life.

Course Title: Marketing Management

- Identify the basic concepts and various environmental factors affecting marketing functions.
- To enable the students to analyze the buyer behavior and market segmentation.
- Compare and analyze the classification of goods and apply the tools of branding, packaging, pricing and labeling.
- To demonstrate the knowledge of advertising, public relations and sales promotion.
- To critically analyze the recent changes in the field of marketing and discuss the types of physical distribution.
- Apply theoretical marketing concepts to the practical situation.

Course Title: Management Accounting

- To enlighten the students thought and knowledge on management Accounting
- Helps to give proper idea on financial statement analysis in practical point of view
- To introduce the concept of fund flow
- To introduce the concept of cash flow statement
- To develop the know-how and concept of marginal costing with practical problems

Course Title: Programming in C

- Identify situations where computational methods and computers would be useful.
- Choose the right data representation formats based on the requirements of the problem.
- Use the comparisons and limitations of the various programming constructs and choose the right one for the task in hand.
- Demonstrate the call by value and call by reference in functions.
- Ability to work with arrays of complex objects.
- To use the concepts of edit, compile, debug, correct, recompile and run it.

Course Title: Personality Enrichment

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

Course Title: Programming in c Lab

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

Course Title: Entrepreneurial Development

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

Course Title: Programming in C++

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

Course Title: Programming in C++ Lab

- Discuss the difference between object oriented programming and procedural oriented language and data types in C++.
- Formulate the key concepts of object oriented programming and have an ability to design OO programs and appreciate the techniques of good design.
- Analyze complex programming problems and optimize the Solutions.
- Apply an understanding of ethical principles to problems.
- 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

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

Course Title: Quantitative Aptitude

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

Course Title: Management Information System

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

Course Title: Financial Management

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

Course Title: Web Technology

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

Course Title: Web Technology Lab

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

Course Title: E-Business

- To demonstrate an understanding of the foundations and importance of E-business.
- To prepare the students understand about the key features of Internet, Intranets and Extranets and explain how they relate to each other.
- To make the students aware about the electronic payment systems.

- To obtain the knowledge of e-retailing and its services.
- To understand the basic concept of M-commerce and generation of mobile wireless technology.

Course Title: Database Management system

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

Course Title: Human Resource Management

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

Course Title: Business Environment

- To discuss about the Business and Business Environment.
- To demonstrate the knowledge about the political environment and the Government relationship with business.
- To identify the social environment of business.
- Recognize the importance of economy and analyze the economic environment of business.
- Identify the financial environment of business and the functions of various financial institutions.

Course Title: Software Project Management

- To identify project planning and evaluation techniques.
- To identify appropriate project approach and choosing technologies.
- To explain the concept of estimation.
- To determine an appropriate network planning models and identifying critical activities.
- To demonstrate the concept of risk management during the project approach and planning.

Course Title: RDBMS with SQL (Theory)

- To identify the basic concepts and various data model used in database design.
- To apply relational database theory and be able to describe relational algebra expression, tuple and domain relation expression fro queries.
- To recognize and identify the use of normalization and functional dependency, indexing and hashing technique used in database design.
- To demonstrate the purpose of query processing and optimization and also demonstrate the basic of query evaluation.
- To apply and relate the concept of transaction, concurrency control and recovery in database.

Course Title: RDBMS with SQL (Practical)

- To transform an information model into a relational database schema and to use a datadefinition language and/or utilities to implement the schema using a DBMS.
- To use an SQL interface of a multi-user relational DBMS package to create, secure, populate, maintain, and query a database.
- To formulate query, using SQL, solutions to a broad range of query and data update problems.
- To Use a desktop database package to create, populate, maintain, and query a database.

Course Title: Programming in Python (Theory)

- To identify why Python is a useful scripting language for developers.
- To demonstrate how to design and program Python applications.
- To identify how to use lists, tuples, and dictionaries in Python programs.
- To apply how to identify Python object types.
- To demonstrate how to write loops and decision statements in Python.
- To learn how to write functions and pass arguments in Python.
- To learn how to build and package Python modules for reusability.

Course Title: Programming in Python (Practical)

- To demonstrate Write, Test and Debug Python Programs.
- To implement Conditionals and Loops for Python Programs.
- To implement the use functions and represent Compound data using Lists, Tuples and Dictionaries.
- To implement Read and write data from & to files in Python.

Course Title: PHP Programming (Theory)

- To demonstrate how server-side programming works on the web.
- To identify How to receive and process form submission data.
- To implement Reading and writing cookies.
- To demonstrate a database in phpMyAdmin.
- To implement Read and process data in a MySQL database.

Course Title: PHP Programming (Practical)

- To demonstrate PHP Basic syntax for variable types and calculations.
- To implement conditional structures.
- To implement Storing data in arrays.
- To identify using PHP built-in functions and creating custom functions.
- To demonstrate POST and GET in form submission.

Course Title: Project

- Hands-on experience to the students in fields of management, marketing, information system, human resource, finance or software project management.
- enabling them to learn the nuance of working both as an individual and as a team.

11. B.Com (Marketing Management) Specific Course Outcome:

- 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.
- 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.
- 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.

- 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.
- Students proceed through the curriculum in a planned sequence that culminates with the development of a marketing plan.
- As they gain expertise in the area of marketing, they can be placed in Sales & Marketing divisions of companies.
- Students can undertake research projects in the field of marketing like “Customer Satisfaction”, “Buyer behavior”, “Customer relationship management”, etc.
- 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.
- With the knowledge gained from this course they can conduct Marketing research and provide market intelligence to the business entrepreneurs.
- 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 Outcome:

Course Title: Core I Financial Accounting

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

Course Title: Core II Principles of Management

- Debate and interact the management evolution and how it will affect future managers.
- adopt and estimate the influence of historical forces on the current practice of management

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

Course Title: Allied I - Business Communication

- Demonstrate the meaning, function, types of business communication.
- Distinguish the oral and writing communication.
- Interpret the channels of communication in business.
- Illustrate the business letter layout
- Discuss the various types of business letters.
- Analysis the various types of report
- Explain the various modern form of communication.

Course Title: NME I Analytical and Logical Reasoning

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

Course Title: Core III Business and Corporate Law

- Make the students understand about business and corporate law.
- Develop knowledge on contract and various types of contract.
- To help the students to understand the concept of sale of goods.
- To make the students understand about companies and its types.
- Inherit the knowledge about the legal methodology involved business by the students

Course Title: Core IV Banking

- To provide knowledge about the various banking terms
- To educate the students on the practical applications of banking service.
- To acquire knowledge on banking and financial system in India.
- To acquire knowledge about commercial banks and its products.
- To aim familiarize banking system in India.
- To create awareness

Course Title: Allied II Statistics and Operation Research I

- To introduce the basic concepts of statistics and understand the statistical techniques used for business data analysis.
- To give an insight into operation research techniques used in business for critical decision making.
- Identify and develop operational research model from the verbal description of the real system.
- To familiarize the mathematical tools that are needed to solve optimization problems.
- Use mathematical software to solve the proposed models.

Course Title: NME II Emotional Intelligence

- To learn the skills involved in emotional intelligence.
- To evoke knowledge amongst students on emotional intelligence.
- To make students understand the importance of self awareness and self development.
- To discuss the importance of emotional intelligence.
- Evaluate and analyzing the quality of students based certain test

Course Title: Core V Marketing Management

- To teach the importance on brand and its impacts among customers.
- To acquire knowledge about the role and importance of marketing.
- To analysis how marketing helps to bridge the production and consumption gaps.
- Identify the factors influencing consumer behavior and purchase decision.
- To acquire knowledge about the 4p's of marketing concepts.
- To identify the concepts of sales distribution and its role in marketing
- To gain the concepts of various pricing strategy in marketing.

Course Title: Core VI Corporate Accounting

- To analysis the preparation of accounting for companies.
- To compute alteration of share capital.
- To acquire knowledge on the accounting of share and company final accounts.
- To enable students to prepare final accounts on joint stock company
- To familiarize students with accounting treatments adopted for raising funds and redeeming them.

Course Title: Core VII E-Business

- To provide a stage to learn electronic business.
- It talks about basics concepts of e-commerce.
- Debate and elaborate theoretical and practical issues of conducting business over the internet and web.
- To introduce concepts, tools and approaches to electronic-business.
- Plan to help the students to develop skills to manage business in digital world.

Course Title: Core VIII Entrepreneurial Development

- To create cautiousness among students about entrepreneurship and its impotence.
- To keep the students inform about various financial academy that promote ed.
- To encourage student to become entrepreneur.
- Have the capacity to discuss destruct entrepreneurial treats
- Know the parameters to assess.

Course Title: Allied III Business Statics and Operational Research-II

- The objectives of the paper are to introduce the basic concepts of operational research and linear programming to the students.
- To introduce basic concepts of statics and understand the statistical techniques used for business data analysis.
- To give an insight into operation research techniques used in business for critical decision making.
- Demonstrate meaning, function and types of business statistics.
- Calculate the mean, median, mode of the statistical methods.

Course Title: Core-IX Retail Marketing

- Demonstrate the meaning, function, factors, types and roles of retailer.
- Discuss the consumer behavior towards retail market.
- Apply and use of buying motives factors in retail business.
- Analyze the different types of store layout.
- Discuss the function of retailing in India.

Course Title: Core X Research Methods in Business

- To make students aware about the importance of research in business
- 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.
- To develop understanding of the basic framework of research designs and techniques
- To develop an understanding of various research designs and techniques
- To organize and conduct research in a more appropriate manner.

Course Title: Core XI Financial Services

- To impart knowledge about the various financial services.
- To have knowledge of venture capital and mutual funds.
- 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
- To acquire the skill necessary to participate in managing a financial service company.
- To describe and apply financial concept theories and tools.

Course Title: Core XII Elements of Financial Management

- To appreciate the role of finance in an organization.
- To identify sources from where funds can be raised keeping in mind the cost and risk involved.
- To familiarize the students the technique to be employed taking into consideration the risk and the return.
- To understand the various finance services.
- To understand how to take capital budgeting and investment decision

Course Title: Allied IV Business Economics

- To develop basics understanding about the economics concepts, tools and techniques for their applications in business decisions.
- To learn the basic theories in economics connection with business.
- To understand the various economics models.
- To introduces the students to the role of international. Trade
- To understand demand and supply function

Course Title: Core XIII Human Resource Management

- To understand the nature of human resources and its significance to the organization
- To familiarize student with the various techniques in hrm that contribute to the overall effectiveness of an organization
- To bring to the attention of the student the latest trends in managing human resources in an organization
- Discuss the various hr practices in organization.
- Measuring of the various methods remuneration of personnel.

Course Title: Core XIV Management Accounting

- To formulate and analyze financial statements to help in managerial decision making.
- To prepare statement like cashflow, fund flow and budgets etc. so as to enable the management to make meaningful decision and correct decision
- To revise the various tools and techniques in cost control like variance , variance analysis and budgetary control
- use a problem solving strategy to set up and solve word problems
- To enable students to understand the need and importance of preparation of financial statements.

Course Title: Core-XV International Marketing

- Demonstrate, meaning, functions, need and importance of international marketing
- Analysis the meaning of balance of payments and design the balance of trade
- Demonstrating in detail about various pricing strategies
- Determine the documentation procedures on import and export trading
- Discuss the WTO and global markets

Course Title: Core-XVI Advertising Management and Sales Promotion

- To learn the basic concept of advertising and sales promotion
- To understand the various types of advertising
- To discuss the various tricks of sale promotion
- Identifying and describing the various types of advertising
- Explain the steps involved in sales force management

Course Title: Elective – 1 Tourism Management

- To learn various types of tourism sectors
- To know the impact of tourism in India's economy
- Possess skills and experience relating to the management and production of tourism in a professional setting
- Write clearly and concisely in the conventions of tourism studies.
- Plan, lead, organize and control resources for effective and efficient tourism operations.

Course Title: Core-XVII Sales and Distribution Management

- Discuss the role and responsibilities of a sales manager and sales force
- To analyze various types of sales distribution
- To outline the essentials of a good advertisement copy
- To explain the various types of advertising
- To outline the duties and responsibility of sales force

Course Title: Core-XVIII Cost Accounting

- To understand the methods of cost accounting
- To familiarize the methods of application in cost accounting
- Demonstrate how materials, labor and overhead costs are added to a product at each stage of the product cycle
- Describe how cost accounting is used for decision making and performance evaluation
- Formulate overhead using predetermined rates and activity – based costing

Course Title: Core-XIX Service Marketing

- To promote a customer service oriented mindset
- To develop an understanding of the 'state of the art' service management thinking

- Demonstrate ability in evaluating service design
- To apply the concepts of 7P'S in service marketing
- Identify critical issues its service design including the service products and markets , building the service model and creating customer value

Course Title: Elective –II Supply Chain Management

- Demonstrate operation purchasing methods and techniques on supplier management and supply in specific business context
- Discuss the strategies and importance of logistics elements and describe how they affect
- Develop a sound understanding of the important role of supply chain management in today's business environment
- Analyze (big) data in supply chain 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

- Knowledge about the nature and basic concepts of biological science and evolutionary relationships of major group of animals.
- Analyse the distribution of animals, plants and microbes and their relationships with the environment.
- Recognize the functions of the organism at the level of gene, genome, cell, tissue, organ, and organ-system
- Realize the importance of environment conservation and biodiversity.
- Perform procedures as per laboratory standards in the areas of Physiology, Biochemistry, Ecology, Biotechnology, Immunology and Microbiology.
- Realize the applications of biological sciences in Apiculture, Aquaculture, Economic Entomology and Pest Management, Genetic Engineering and Recombinant DNA technology. Microbiology and Industrial Biotechnology and Nanotechnology.
- Develop ethical, environmental and social responsibilities. Develop love and respect towards nature
- 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 Programme Course Outcome:

Course Title: Diversity and Functional Anatomy of Invertebrates

- Knowledge on basic life functions of unicellular organisms. Understand the morphology, anatomy, reproduction and life cycle of Paramecium and Plasmodium.
- Understand Cellular organization in Porifera (Sycon) and Coelenterate (Obelia and Aurelia) and appreciation of canal system in Sponges and polymorphic forms in Coelenterates
- Understand the morphology, anatomy, life history of Taenia solium and Ascaris. Gain knowledge on parasitic
- Adaptations in Platyhelminthes, biological significance of nematode parasites in humans, Excretory organs in Annelida and Metamerism in Annelida
- Understand the organization of Penaeus and Pila with appreciation on significance of larval forms and foot in Molluscs. Know the economic importance of Mollusca
- Knowledge on Echinoderms and Balanoglossus and systematic importance

Course Title: Diversity and Functional Anatomy of Chordates

- Describe the basic and distinctive characters of each classes. Discuss the development and affinities of Cephalochordata and explain the organization of Cyclostomata and migration in Petromyzon
- Understand the development and affinities of Hemichordata.
- Understand the development and affinities of Urochordata. Acquire knowledge on morphology and functional anatomy of Labeo and Rana hexadactyla. Understand the importance of accessory respiratory organs, types of fins in fishes for identification and discuss on parental care in Amphibia
- Explain morphology and functional anatomy of Columba livia and Calotes versicolor. Gain knowledge on arcades and fossa, migration in birds and Palate in Birds

- Understand the morphology and functional anatomy of *Oryctolagus*, cuniculus and acquire knowledge on dentition in mammals.

Course Title: Invertebrata and Chordata - Practical

- Identification and classification of the specimen up to order
- Highlight on the biological significance of the given animal and Relate the structure and function
- Understand the morphology and anatomy of Invertebrate and Chordate specimen through dissection
- Identify Invertebrate and Chordate specimens during field visit
- Mounting of mouthparts of Cockroach, Mosquito, appendages of prawn and Ctenoid Scale in mugil and Placoid scale in shark and learn their significance

Course Title: Cell and Molecularbiology

- Understand the fundamental features of prokaryotic and eukaryotic cells and methods used to examine them. Gain knowledge on different models of plasma membrane
- Understand the cell structure and function and the metabolic processes of Endoplasmic reticulum, Golgi complex and Microbodies
- Discuss the role of mitochondria and lysosomes in cell physiology. Outline the process of cell autophagy
- Describe the structure and functions of nucleus and centrioles
- Highlight the steps involved in cell cycle and cell division, cell aging. Acquire knowledge on intercellular and intracellular signaling

Course Title: Genetics and Evolution

- Understand Mendel's law; To predict the outcome of crosses including the use of Punnett square.
- Explain the chromosomal basis of sex determination and apply that understanding to predict the sex individuals with normal and abnormal complements of sex chromosomes. And understand the structure of DNA, RNA and mechanism of DNA replication.; Highlight the types of mutation
- Knowledge on sex-linked characteristics and their transmissions, linkage and crossing over; Describe human genetics with reference to normal and abnormal karyotypes

- Compare Lamarckism and Darwinism; living and extinct fossils, importance of Mimicry and colouration;
- Discuss about the Geological time scale, convergent, divergent, parallel evolution and adaptive radiation in mammals
- Understand the role of genetics mechanism in evolution; and explain the key concept of genetic drift, founders principle; trace the evolution of man

Course Title: Cell Biology and Genetics – Practical

- Understand the use and handling of microscope
- Demonstrate blood smear preparation and enumeration of RBC and WBC
- Demonstrate various cell stages during mitosis and meiosis; Mounting of buccal epithelium and observation
- Observation and study of prepared histology slides
- Observation of common mutants; study on normal and abnormal karyotype and identification of human blood group

Course Title: Developmental Biology Andimmunology

- Understand the basic concepts of developmental biology
- Describe the mechanism and physiology of fertilization. Compare the process of cleavage and Blastulation,
- Gastrulation, tubulation in frog and chick
- Understand the key concepts of development of membranes and formation of placenta, biochemical basis of embryology, regeneration and metamorphosis. Knowledge on application of Reproductive technology
- Discuss history of immunology and organization of immune system
- Highlight the structure, types and properties of antigens, immunoglobulins. Knowledge on techniques used in immunology

Course Title: Biotechnology and Nanotechnology

- Understand the history and Indian scenario in Biotechnology and its application in agriculture, food and pharmaceutical industry and beverages. Describe the Structure and reproduction of E.coli and Bacteriophage
- Understand the steps involved in gene cloning; Compare the methods of DNA cloning in different types of cloning vectors

- Discuss the techniques and importance of gene cloning in E.coli.
- Highlight the principle, techniques and importance of plant and animal cell culture
- Understand the fundamental principles of nanotechnology and their application in medicine, environment, food and Veterinary

Course Title: Animal Physiology, Biochemistry and Endocrinology

- Understand the basis of enzymes and its regulation. Highlight the role of enzymes in digestion and digestion by symbionts. Discuss the mechanism of absorption.
- Discuss in depth the structure and physiology of Respiratory, Muscle, Excretory, Circulatory and Nervous system
- Acquire knowledge on Structure and Metabolism of carbohydrate, protein and lipids and its regulation.
- Understand the basic concepts of hormones and their mode of action and gonadal hormones in mammals. Outline the hormonal control of metabolism, development, somatic pigmentation and reproduction in insects. Discuss physiology in relation to reproduction.
- Discuss the structure, functions and biological actions of endocrine glands.

Course Title: Biostatistics and Computer Applications for Life Science

- 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.
- Understand normal distribution and hypothesis testing. Knowledge on Regression analysis and Theories of probability.
- Understand the meaning and basic components of a computer system. Explain computer algorithms and highlight milestones in hardware and software development techniques
- Discuss data storage devices used in computer applications.
- Acquire knowledge on MS Word and MS Excel and Highlight the advantages, limitations and applications of internet

Course Title: Medical Laboratory Techniques and bioinstrumentations

- Basic knowledge on collection of samples, maintaining records and preparation of reports
- Demonstrate laboratory practice standards in safety precaution and first – aid treatment.

- Analyse routine human medical samples
- Discuss the causative organisms, mode of transmission, pathogenicity, symptoms and preventive measures of infectious diseases in man
- Understand the Principles and use of the instruments utilized in common laboratories.

Course Title: Environmental Biology and Taxonomy

- Demonstrate an understanding of the principles of ecology and ecosystem
- Understand the importance of biogeochemical cycles and obtain knowledge on ecological succession.
- Knowledge on freshwater and marine habitat, National and International Environmental organizations, Red Data Book and Wildlife management.
- Understand the perspectives of systematics and history, classification, procedure and importance of taxonomy.
- Highlight on objectives and rules for nomenclature type system and priority for different taxa. Describe the population structure of species.

Course Title: Genetic Engineering and Recombinant Dnatechnology

- Understand the basic concepts of gene cloning. Discuss the importance of enzymes and plasmids used in genetic engineering
- Acquire knowledge on cloning vectors for E.coli and identification of recombinants and structure and reproduction of bacteriophages
- Describe cloning vectors for yeast and fungi and identification of recombinants from gene library and methods of clone identification
- Obtain knowledge on various techniques used in genetic engineering and recombinant DNA technology and application of rDNA technology in Medicine, Agriculture and Environment.
- Explain DNA sequencing method. Understanding the application of genetic engineering in medicine, alcohol production and vaccine production.

Course Title: Microbiology and Industrial Biotechnology

- Understand the history of Microbiology. Knowledge on basic concepts of biogenesis and abiogenesis, Koch Postulates. Understand the Principal, Working procedure and application of Microscopy

- Acquire knowledge on classification of microorganisms Discuss the morphology of Bacteria, Viruses and Fungi with major emphasis on bacterial structure specially cell wall. Demonstrate Gram positive and Gram-negative bacteria and understand basis of microbial spores
- Gain knowledge on microbial growth and sterilization techniques
- Discuss the importance of food microbiology, dairy microbiology, water microbiology and soil microbiology
- Explain the role of microorganisms in production of industrial enzymes, antibiotics, biopolymer, biopreservative, recombinant proteins and its applications; Acquire knowledge on the products of animal and plant cell culture

Course Title: Wild Life Conservation (IDE)

- Understand the importance and need for wildlife conservation. Explain the causes of wildlife depletion.
- Acquire knowledge on population estimation and wildlife photography.
- Outline the wildlife health care and confliction and control measures
- Highlight wildlife management and legislation.
- Knowledge on wildlife protection.

Course Title: Economic Entomology and Pest Management

- Describe the basics of insect structure and functions
- Identify and Discuss beneficial and harmful insects
- Explain the insect pests of stored grains and knowledge on insect vectors of plants, animals and man
- Discuss insect pest control methods
- Explain the basic principles of insecticide formulation, environmental pollution and also able to understand the precautions in handling pesticide

Course Title: Practical – Animal Physiology, Biochemistry, Developmental Biology and Immunology

- Understanding the principle, working procedure and applications of BP apparatus, Respirometer and Kymograph
- Knowledge on digestive enzymes in cockroach, detection of nitrogenous waste products and estimation of oxygen consumption

- Understand the principle, procedure and significance of qualitative analysis of sugar; Understand the principle of estimation of glycogen and protein
- Describe the structure and significance of histological slides, specimens and materials related to developmental biology
- Explain the principle, working mechanism and applications of techniques used in immunology

Course Title: Practical – Environmental Biology, Biotechnology and Microbiology

- Understand the principle, methodology and significance of estimation of oxygen, salinity, carbon dioxide, carbonates, bicarbonates and calcium in the given water samples
- Demonstration of PCR, blotting techniques, staining techniques and media preparations
- Knowledge on identification of planktons and adaptation of aquatic and terrestrial animals based on the study of museum specimens and microbial slides
- Understand the basic principle on instrumentation
- Knowledge on natural ecosystem during field visit

Course Title: Allied Zoology –I

- Understand the general characters and classification of invertebrates. Gain knowledge on cellular organization, morphology, anatomy and life history of Protozoa, Porifera, Coelenterata and Platyhelminthes
- Discuss the morphology, anatomy, larval forms and distinctive characters of Phylum Annelida, Arthropoda, Mollusca and Echinodermata.
- Understand the distinctive characters and classification of Chordata. Gain knowledge on affinities of Prochordates. Describe the general characters and classification of class Pisces with an example.
- Knowledge on morphology and anatomy of class Amphibia and Reptilia.
- Compare and contrast between class Aves and Mammalia

Course Title: Allied Zoology –II

- Describe fundamental features of an animal cell. Understand the cell structure and function and the metabolic processes of cells in terms of cellular organelles, membranes and biological molecules. Acquire knowledge on the concepts of molecular structure of genes and the inborn errors of metabolism. Highlight the role and application of genetic engineering.

- Understand the basic concepts of developmental biology. Explain the process of gametogenesis and fertilization. Discuss cleavage and gastrulation in chick.
- Discuss in depth the physiology of the Digestive, Excretory and Cardiovascular systems.
- Understand the basic concept of Ecology and gain knowledge on environmental degradation treatment and greenhouse effect.
- Discuss the significance of Darwinism and Lamarckism. Explain the factors responsible for speciation.

Course Title: Allied Zoology Practical

- Learn to identify and classify the Specimen
- Understand the biological significance of the biological specimen
- Understand the morphology and anatomy of Invertebrate and Chordate specimen through dissection
- Mounting of mouthparts of Cockroach, Mosquito and appendages of prawn and learn their significance

Course Title: NME – Aquaculture

- Analyze the physical and chemical characteristic features of water bodies in fisheries. Understand the types of culture system and its advantages in fisheries.
- Describe the Selection criteria and feed formulation for cultivable species. Knowledge on maintenance and management of different types of fish ponds.
- Understand the importance of induced breeding in Indian major carps and gain knowledge on live feed and carp culture.
- Understand the techniques practiced in culturing of fishes and oysters.
- Acquire knowledge on culture of marine and freshwater prawns. Understand the impact of pathogens on fish and prawn industry. Explain the use of crafts and gears in fishing technology. Highlight the various methods adopted in fish preservation and processing and agencies involved in the Aquaculture.

Course Title: NME – Public Health Andhygiene

- Understand the scope of Public health and hygiene. Acquire knowledge on the Nutritional deficiencies and nutritional requirement for special group of children.
- Identify various sources of pollution and to discuss on their impact on the environment and its control measures

- Describe the causative agents, pathogenicity and control measures of communicable diseases
- Understand the cause, symptoms, prevention, control, early diagnosis and treatment of non-communicable diseases.
- Gain knowledge on first-aid and nursing. Understand the role of Government, World Health Organization and Non - governmental Voluntary Health Organizations in Health education.

13. B.Sc Biotechnology Programme Specific Outcome:

- To gain knowledge and acquired skills to understand the fundamentals and complex interactions among various living organisms.
- To be trained towards sustainable development and judicious usage of natural resources ethically.
- To decide and apply appropriate tools and techniques in Biotechnological manipulation.
- To undertake any responsibility as an individual and as a team in a multidisciplinary environment.
- To develop oral and written communication skills.
- To demonstrate knowledge of project and finance management during the product production.
- To peruse their ethical principles and commit to professional ethics and responsibilities in delivering his or her duties.
- To attain professional status in the core fields like Fermentation technology, Health care industries: therapeutic agent development like Vaccine production and formulation, nutraceutical product development and formulations, diagnostic kit development, Food industry, and also in the lateral fields like as Patent officers, Biostatisticians, *In-silico* fields like bioelectronics, bioinformatics, in the field of environmental sustainability, Bioentrepreneurs to support the biobased industries, Science communicators which are the need of the hour in today's world.

B.Sc Biotechnology Course Outcome:

Course Title: Cell Biology

- To discuss the various fields of biotechnology and their scopes.

- To outline the different types of intellectual property like Patents, Publications, Trademarks, Copyrights.
- To compile the list of Indian Biotechnology sectors and to assess their various products.
- To analyse and explain the organisation of living organism and to assess the role of different organelles and components of a cell.
- To outline the molecular levels of organization from epithelial cell and integumentary system.
- To discuss the role and function of mitochondria, chloroplast, lysosome, peroxisomes, glyoxysomes, centrioles and nucleus
- To explain the role of transposable elements in the process of genetic recombination.
- To demonstrate the overview of transcription and translation of eukaryotic cells and its regulatory mechanism.
- To explain the role of protein and predict their modification for protein folding and sorting.
- To analyse the types of cellular communication and to assess the phases of cell cycle and their role in cancer biology.

Course Title: Chemistry

- To discuss various fundamental concept in organic chemistry
- To outline the importance of functional groups
- To predict the atomic and molecular structures
- To explain co-ordination chemistry and water technology
- To analyse the basic principles of physical chemistry
- To analyse the basic principles of electrochemistry
- To discuss different concepts involved in stereochemistry
- To explain the types and factors influencing chemical reactions

Course Title: Biochemistry

- To gain knowledge about early earth atmosphere and theory related to formation of biomolecules on earth based upon the case study
- To relate classification and functions of biomolecules relate to health management.
- To establish ideas, principals, concepts and techniques drawn from the study of biomolecules

- To analyse the wide range of agriculture, medical and industrial application and product discovery.
- To conduct practical based task in a responsible safe and ethical manner taking proper account of risk assessment, health and safety regulations.
- To apply the major theories and research procedures to contemporary social demands

Course Title: Bioinstrumentation and Biotechniques

- To explain the definition and calculations involved in sample preparation.
- To justify basic principles, working, types and applications of centrifuge.
- To describe the general principle and working of different chromatography types
- To prepare different solution like buffers required for electrophoretic technique.
- To prepare the solutions for sample extraction
- To acquire idea about the principle, working and applications of SDS-PAGE and Immuno electrophoresis.
- To examine principle, instrumentation and applications of various spectroscopic methods.

Course Title: Cell Biology and Biochemistry (Practical)

- To explain the principle and components of the compound microscope.
- To explain the morphology of cells using Buccal Smear and Onion Peel
- To count the blood cells and to assess the morphology of the cells for any diseased condition.
- To analyze the different stages of cell division (mitosis) by squash method.
- To examine different biomolecules like protein, carbohydrates and lipids from succulent stem.
- To explain and evaluate the estimation of biomolecules
- To demonstrate qualitative and quantitative of carbohydrates and amino acids
- To detect and analyse the different phytochemicals from tulasi leaf extract
- To demonstrate the different plant pigments through TLC.
- To evaluate the oxidative properties of plant leaf extract

Course Title: Chemistry and Bioinstrumentation and Biotechniques (Practical)

- To apply the titrimetric principles in acid base estimation
- To compare and discuss about functional groups of the organic compounds

- To demonstrate the water quality by chemical methods
- To calculate the molarity, molality, normality, equivalent weight.
- To apply the principles of centrifugation, spectroscopy in biomolecule separation and analyses
- To demonstrate the separation of biomolecules from the leaf sample
- To evaluate the proteins in food samples
- To discuss the various types of DNA banding pattern in agarose gel electrophoresis
- To explain the protein profiling by SDS-PAGE from bacterial cell

Course Title: Genetics

- To compile the milestones in the history of classical and modern genetics
- To demonstrate the classical Mendelian experiments
- To use the techniques for the clarification of non-Mendelian concepts
- To explain the methods and principles of genetic recombination
- To discuss the theories and mechanism of evolution
- To recall the principles of molecular basis of inheritance and variation
- To discuss the effects of mutation in genetic disorders

Course Title: Biochemistry-I

- To discuss about the classification and structural elucidation and biological importance of biomolecules
- To relate bioapplications and classifications of porphyrins, vitamin and hormones
- To compile the principles of bioenergetics, metabolism of carbohydrates, fats, proteins and outline of purine and pyrimidine
- To create the deeper discussion about prostaglandins, leukotrienes, thromboxane, interferon and pigments.
- To identify the suitable separation techniques for biomolecules by chromatography, centrifugation and electrophoresis.
- To apply the major theories and practical knowledge for contemporary job market

Course Title: Plant Biotechnology

- To assess the plant genome and its collective gene family and the organization of chloroplast and mitochondria

- To compare the various plant viral vectors and to use the efficient method for genetic transformation.
- To evaluate the different seed storage proteins and to explain the regeneration of gene expression.
- To select the plant and the methodology for the production of plant based vaccine.
- To compare the molecular basis of action of different plant growth hormones and their role in photomorphogenesis
- To use novel technologies for the fruit ripening and processing.
- To evaluate the types of plant growth media and to formulate innovative and novel growth media.
- To apply the concepts of haploid plants and to use protoplast isolation for various applications.

Course Title: Biochemistry-II

- To gain adequate knowledge about classification of carbohydrates
- To compile classification of amino acids and proteins
- To explain biological, chemical importance and its metabolism of fatty acids and
- To discuss the structure of DNA, RNA and the importance of genetic code
- To relate the biological and chemical importance of vitamin and its deficiency status
- To use advanced technique with its principles to analyze deeper range of industrial applications.
- To apply the major theory and practical knowledge to contemporary industrial demands

Course Title: Genetics and Plant Biotechnology

- To analyze the karyotypes of human chromosome using photomicrograph
- To differentiate the male and female Drosophila, wild and mutant strains
- To culture genetic model- drosophila and to observe stages of its life cycle
- To perform the blood grouping and discuss the mechanism of co-dominance
- To perform and analyses the various stages of mitotic and meiotic cell divisions
- To design and outline the requisites of a Plant tissue culture laboratory
- To demonstrate the callus development and Micropropagation of plants.
- To demonstrate Protoplast isolation and fusion of plants.

- To isolate beneficial bacteria and bacterial consortium for production of secondary metabolites involved plant growth.
- To demonstrate the production of single cell protein by *Spirulina* Culture.
- To discuss and apply the various advanced techniques like Southern, Northern Hybridization, Electroporation and Biolistic methodology.

Course Title: Biochemistry

- To apply the titrimetric principles in acid base estimation
- To explain and evaluate the estimation of biomolecules
- To demonstrate qualitative and quantitative of carbohydrates and amino acids
- Detection of biomolecules from food sample
- Estimation of Vitamin C by dichlorophenol and indophenol

Course Title: Animal, Medical Biotechnology

- To compile principles of animal biotechnology and its role in animal breeding
- To demonstrate about the importance of medical biotechnology and disease diagnosis using modern technique
- To analyze the diagnosis of existing and emerging health diseases
- To demonstrate in detail about vaccines and its types
- To explain different steps involved in genetic engineering of micro-organisms
- To discuss about maintenance of animal cell lines as an alternative to animal models

Course Title: Bioinformatics

- To explain about the importance of bioinformatics and its scopes
- To acquire idea about different types of biological databases and data retrieval
- To discuss different methods of sequence alignment and its computational tools.
- To discuss gene prediction methods in prokaryotes and eukaryotes
- To explain in detail about protein database, comparison of protein sequences, database searching and its structure prediction.
- To describe microarray technology for gene expression studies.
- To analyze genomic and proteomic information with respect to biological system.

Course Title: Immunology

- To demonstrate the basic concepts of immunology and antigen, isolation, purification and characterization
- To demonstrate the purification of mononuclear cells from blood and isolation of lymphocytes
- To explain hybridoma and monoclonal antibody production and their application in biomedical research
- To assess the hypersensitivity reaction both in situ – and in vivo and HLA typing
- To analyze the biology and assay of cytokines
- To demonstrate the preparation of vaccine including DNA vaccine

Course Title: Biostatistics and Computer application in Life Science

- To outline early earth atmosphere and theory related to formation of biomolecules on earth based upon the case study
- To relate classification and functions of biomolecules relate to health management.
- To establish ideas, principles, concepts and techniques drawn from the study of biomolecules
- To analyze the wide range of agriculture, medical , industrial application and product discovery.
- To conduct practical based task in a responsible safe and ethical manner taking proper account of risk assessment, health and safety regulations.
- To apply the major theories and research procedures to contemporary social demands

Course Title: Pharmaceutical Biotechnology

- To compare and screen the microbes of pharmaceutical values
- To explain the series of steps involved in drug development process
- To determine the fate of drug in human body
- To demonstrate the phase involved in pre-clinical and clinical trials
- To analyse the various drug formulation, drug administration and drug description methods
- To clarify the protocols in achieving drug approval and marketing
- To discuss about the demand of Health care products and diagnostics in local and global market
- To plan and prepare themselves to meet the demand of the Biopharmaceutical sectors

Course Title: Genetic Engineering

- To explain the mechanism of enzymes involved in Recombinant technology
- To select appropriate types of vectors and expression systems for molecular cloning
- To screen and distinguish the Transformants and non- Transformants
- To use the molecular techniques for analyzing the biomolecules
- To demonstrate series of steps involved in Recombinant technology
- To apply the principles of genetic engineering in the field of agriculture, medicine and research

Course Title: Bioprocess technology

- To compare traditional and modern fermentation technology for appropriate product production
- To demonstrate the applications of the different types of fermenters and fermentation mechanisms
- To differentiate different types of fermentation mechanism.
- To explain the parts of the industrial grade fermenters
- To outline, evaluate the microbial growth kinetics
- To discuss and demonstrate the nutrients requirements for the microbial growth and product formulation
- To compare the various physical parameters and to select the suitable product specific parameters
- To compare and outline steps involved for the down stream processes
- To apply the principles of fermentation processes for various product production

Course Title: Biotechnology and Nanotechnology

- To discuss the basic principles of Nanobiology and to demonstrate the various types of nanoparticles.
- To explain the synthesis, types and applications of biodegradable polymers (Bionanoparticles)
- To outline the different methodologies involved in the synthesis of Nanomaterials (Top Down and Bottom Up)
- To demonstrate the characterization techniques employed in the Nanobiotechnology.
- To evaluate the formation, role and biological applications of carbon nano tube.
- To formulate Nanoformulations for smart delivery systems, smart intelligent packaging and electrochemical sensors.

Course Title: Microbial Biotechnology

- To discuss the methods involved in the microbial culture and preservation
- To explain about the types of fermenter and its application
- To apply principles of microbial cell immobilization in production
- To demonstrate the culture of *Spirulina* and *Candida utilis* spp.
- To explain the role of microbes in alcoholic beverage production, dairy products
- To apply the microbes for agricultural benefits
- To evaluate the role of microbes in bioremediation and recalcitrant of biosphere

Course Title: Environmental Biotechnology

- To discuss the importance of environmental biotechnology for sustainable utilization of natural resources
- To discuss about biofilm and its kinetics
- To demonstrate typical reactor design types and application
- To demonstrate stoichiometric equation in a biochemical reaction
- To outline the different strategies of recalcitrant techniques
- To apply denitrification and physiology of denitrifying bacteria in nitrogen waste degradation
- To analyze detoxification of different hazardous chemicals causing environmental pollution and biodegradation of organic pollutants
- To demonstrate the various principles of biological and chemical applications in sewage and waste water treatment

Course Title: Animal, Medical Biotechnology and Immunology (Practical)

- To evaluate the cell viability
- To explain the importance of serum in animal cell line culture
- To demonstrate the preparation of single cell suspension for cell line culture
- To outline the cryopreservation techniques for animal cell line maintenance
- To apply the different serum, medium sterilization techniques
- To demonstrate the establishment of monolayer of animal cells and its Trypsinisation process
- To explain the principles of agglutination and precipitation reactions
- To demonstrate the indirect agglutination reactions

- To discuss about the maintenance of laboratory animals
- To demonstrate ELISA technique

Course Title: Genetic Engineering and Bioprocess Technology (Practical)

- To extract the biomolecules : Protein, DNA and RNA by centrifugation methods
- To separate and observe the biomolecules by electrophoretic techniques
- To estimate the biomolecules using the UV-spectroscopy analyses
- To prepare the expression system for cloning
- To maintain the stock bacterial cell used in genetic engineering experiments
- To isolate the gene of insert by Restriction digestion methods
- To demonstrate the amplification of DNA by PCR
- To evaluate the biomolecules in grapes juice and to acquire the mechanism involved in the production of wine
- To select the appropriate techniques in the enzymes immobilization
- To formulate the media and to select the suitable physical parameters for the product production like citric acid and amylase
- To formulate medium and microbes concentration for citric acid production
- To choose the appropriate down- stream processing of citric acid production

14. B.Sc Chemistry Programme Specific Outcomes:

- Acquire in depth knowledge to face competitive examinations of national standards and capable of doing higher studies.
- Utilize skills in problem solving, critical thinking, analytical reasoning in chemistry domain and use modern experimental techniques
- Enhance skill in planning and conducting experiments, enable them to handle classes at the secondary level.
- Develop a creative scientific mind to communicate effectively the scientific ideas and their impact on socio-economic issues and sensitize the need for a green environment
- Apply the knowledge of chemistry to function effectively as an entrepreneur in chemical or related industries.

B.Sc Chemistry Course Outcomes:

Course Title: Basic Chemistry –I

- To explain the atomic structure, quantum mechanical postulates, quantum number, shape of orbitals.
- To classify the elements in the periodic table and explain their periodic properties.
- To outline hybridisation, chemical bonding and predict the geometry of molecules based on VSEPR theory.
- To write IUPAC name of the compounds, various constitutional isomers of a compound.
- To identify the reaction as substitution, elimination, addition and rearrangements and to understand polar effects, Reaction intermediates and their application in organic chemistry

Course Title: Basic Chemistry –II

- To explain of nuclear structure, stability of the nuclei, nuclear isomers, nuclear reaction, different modes of radioactive decay and nuclear reactor.
- To describe crystal structure, elements of symmetry and understand the defects in crystals
- To give preparation, important chemical properties and uses of hydrocarbons and poly nuclear hydrocarbons.
- To gain an understanding of principles of quantitative and qualitative analysis.
- To predict mechanism in aromatic and aliphatic compounds, types of reaction, to understand the orientation and reactivity in substituted benzene

Course Title: Organo Oxygen Compounds

- To gain knowledge about alcohols, ethers and phenol - structures, nomenclature, classification and chemical reaction, electrophilic substitution of phenols
- To write preparation of aldehydes and ketones, the mechanism of enolization reaction, nucleophilic addition, reduction and electrophilic substitution reactions.
- To explain preparation and properties of mono, dicarboxylic and aromatic acids, acidity of carboxylic acids, effect of substituents on acidity, acid derivatives
- To outline the mechanism of hydrolysis of ester BAC_2 , AAc_2 , keto-enol tautomerism, synthetic applications of acetoacetic, malonic and cyanoacetic ester.
- To gain knowledge on carbohydrates, concept of mutarotation, conformation and on figuration of glucose, evidence for furanose and pyranose structure, interconversion of sugars

Course Title: Chemistry of s-Block and p-Block Elements

- To give preparation of s block elements, Diagonal relationship between Li and Mg. Extraction of Beryllium.
- To outline the preparation of Boron hydrides, Oxides of Boron, Boron and nitrogen compounds and preparation of diborane. glass and ceramic industry
- To write the preparation and properties of nitrogen and phosphorous compounds
- To explain the preparation of halogen compounds, interhalogen compounds and oxides of boron
- To discuss about noble gases, Xenon compounds, separation of noble gases and structure and bonding of noble gas halides.

Course Title: Organo Nitrogen and Natural Products

- To explain the preparation of amines and nitro compounds and their reactions.
- To discuss the classification, preparation, properties of amino acids, structures of proteins and their reactions.
- To identify the structure of RNA, DNA, and to explain the preparation and properties of five and six membered heterocyclic compounds.
- To discuss the preparation properties of alkaloids and to elucidate the structure of alkaloids.
- To classify, isolate and to learn the general properties and structure of terpenoids like citral, menthol, pinene and camphor.

Course Title: Chemical Kinetics and Electro Chemistry

- To write the rate expression of a chemical reaction, to derive the rate constants and half life of zero, first and second order reactions.
- To explain the influence of temperature on reaction rates, collision theory and Lindemann's theory, Absolute reaction rate theory, catalyst and to differentiate between chemisorption and physisorption.
- To calculate the conductance specific and equivalent conductance to apply Kohlrausch's law in solving problems, explain methods to determine the transport number and to calculate transport number, to explain the types of titrations using conductometry.
- To demonstrate electrochemical cell, construction, cell notation, reference electrodes, reversible cells, determining electrochemical potentials, spontaneity of cell reaction.

- To acquire knowledge about concentration cell, cell potential, determination of pH using glass, quin hydrone electrode,, electrochemical theory of corrosion and its prevention

Course Title: Special topics in Chemistry

- To apply the fundamentals of stereochemistry , visualize the various elements of symmetry, learn resolution, racemization and asymmetric synthesis.
- To assign configuration to the isomers,to explain flying, wedge, Newmann, Sawhorse projections and their interconversions, various nomenclature like d/l, D/L, erythro/threo, meso/dl, R-S, E-Z., conformational analysis of ethane and cyclohexane derivatives.
- To define symmetry elements, symmetry operations, point group,to construct multiplication table for C_{2v} point group and to write the symmetry elements for C_{2h}, C_{3v} point groups.
- To state the laws of photochemistry, definition for quantum efficiency and to derive an expression for quantum yield for photochemical reactions between H₂ and Cl ; H₂ and Br.
- To predict the various types of rearrangement reaction mechanism with the concept of migratory aptitudes, stereochemistry and their applications.

Course Title: Analytical Chemistry - I

- To generate analytical data in an appropriate manner.
- To explain analysis of metals through gravimetry method.
- To gain expertise in the instrumental methods of chemical analysis at microgram level.
- To develop the analytical skill in the structural identification of chemical compounds.
- To apply knowledge in QC laboratory activities at ISO standard.
- Thermodynamics and Solutions
- To explain the fundamental concepts of system, process and functions, elucidate the relation between C_p and C_v, between enthalpy of reaction with temperature and pressure and Kirchoff's rule.
- To state the different statements of second law of thermodynamics and apply them to solve problems and to understand the various concepts
- To state third law of thermodynamics and its exceptions, derive the variation of chemical potential with temperature and pressure.

- To describe ideal and non-ideal solutions and study the behaviour of binary liquid mixtures, CST, azeotropes, colligative properties, solubility of gases and liquids in liquids, the preparation and properties of colloids and gels.
- To apply phase rule to find the degree of freedom, draw and interpret phase diagram of one and two component systems, and to apply the knowledge for the removal of silver from lead

Course Title: Chemistry of d and f block elements and Coordination chemistry

- To outline the chemistry of transition and inner transition elements.
- To acquire knowledge on metallurgy and separation of metals.
- To explain the preparation, properties and applications of various transition and inner transition metal compounds.
- To write the IUPAC names of coordination complexes and explain theories of coordination complexes.
- To demonstrate the reaction mechanism in coordination compounds and biological importance of transition metals.

Course Title: Analytical Chemistry- II

- To explain the importance of analytical techniques – Polarography, X-ray, electron & neutron diffraction with the principle, instrumentation and application.
- To discuss in detail about spectroscopic studies like AAS, UV, Visible, IR with the principle, instrumentation and application.
- To highlight the importance of Nuclear Magnetic Resonance spectroscopy in structural determination of organic compounds.
- To study various types of mass spectrometers, principle involved in the technique and extended to application in structure determination of organic and inorganic molecules.
- To outline about various radio analytical techniques and the role of computers in chemistry.

Course Title: Industrial Chemistry

- To explain the needs of industrial requirements, types of fuels, waste management system, application of the industrial catalyst like palladium, platinum, titanium and Raney nickel.

- To acquire knowledge about petrochemicals industry, crude oil, composition of crude oil synthetic petrol process for synthetic petrol.
- To explain preparation and properties of organic solvents like DMSO, DMF Dioxane and THF.
- To explain manufacture of Cl₂, caustic soda and chlorates of Na and K, oils, synthetic detergents and shampoo.
- To outline metallurgy of V, Cr, Mn, Pt, U and Th.

Course Title: Pharmaceutical Chemistry

- To identify the common diseases and their cure, understand the pharmacology, pharmacodynamics and pharmacokinetics, Indian medicinal plants.
- To study the mechanism of drug action, assay and metabolism of drugs.
- To explain the concept of chemotherapy, anaesthetics, analgesics, acquiring knowledge about antibiotics, treatment of AIDS and cancer.
- To acquire knowledge about common body ailments – diabetes and cholesterol – hypoglycemic drugs, cardiovascular drugs and psychedelic drugs.
- To gain knowledge about pharmaceutical industries and their functioning

Course Title: Polymer Chemistry

- To explain the chemistry behind the various polymers and their preparations.
- To give the properties of various polymers and their intended applications
- To have an idea on moulding of polymers, to fabricate innovative shapes.
- To explain the methods and preparation of commercial polymers
- To identify biopolymers and biomaterials.

Course Title: Volumetric Analysis and Inorganic Preparations

- To handle analytical balance, standard flask and volumetric pipettes, burette.
- To prepare solutions of various concentrations.
- To identify the types of error in the experiments, to calibrate the instruments.
- To design, carry out, record and interpret the results of volumetric titration.
- To prepare inorganic compounds and complexes.

Course Title: Inorganic Qualitative Analysis

- To acquire knowledge on the systematic analysis of Mixture of salts
- To identify the acid and basic radicals in the unknown substance.
- To identify the acid and basic radicals in the soil and water and to test the quality of water.

Course Title: Analysis and Preparation of Organic Compounds

- To identify the types of reaction (oxidation, reduction, esterification, acetylation, hydrolysis, bromination and nitration) and reagents used in the preparation of organic compounds
- To calculate theoretical yield and percent yield of the reaction and maintain a detailed record notebook.
- To identify the nature of organic compounds, special elements (N, S & halogen) functional group and prepare suitable derivatives.
- To perform common laboratory techniques like reflux, distillation, recrystallization, vacuum filtration and thin-layer chromatography
- To have an idea about R&D, synthetic chemistry labs in industry.

Course Title: Gravimetric Analysis

- To handle the crucibles (both sintered and silica crucible)
- To estimate the various metal ions gravimetrically.
- To do organic synthesis which is needed in industry.

15. B.Sc. (Computer Science) Programme Specific Outcomes:

- Analyze and Design real time problems by selecting right data structure and apt algorithmic technique
- Apply basic concepts of problem solving methods to vary applications
- Develop small software by selecting appropriate programming C/ Java etc. based on the type of application being developed
- Compare and understand the functionalities of OSI and TCP models
- Apply suitable Software Engineering methodologies to the problem at hand
- Demonstrate basic Computer Architecture and functions of Operating System
- Create website using HTML, Java, PHP

B.Sc. (Computer Science) Course Outcomes:

Course Title: Operating systems

- Demonstrate how operating system acts as user interface and various types of Operating systems
- Identify components of operating system and their functions
- Discuss various process management concepts like scheduling
- Illustrate concurrent processing , mutual exclusion and synchronizations
- Identify the necessary and sufficient condition for deadlock and how to detect, avoid , prevent and recover Deadlock
- Elucidate Memory management techniques like paging, segmentation, demand paging
- Explain file management system

Course Title: Digital Logic and Computer Architecture

- Describe about various Number systems and number system conversion.
- Attain the familiarity about basic logic gates and Boolean functions.
- Discuss about the simplification of Boolean functions using K-Map.
- Pertain the Knowledge of combinational circuit design.
- Converse about combinational circuit design using various types of Flip-flops and shift registers.
- Exhibit about the Basic Computer Organization and Design.
- Discuss about Central Processing Unit (CPU).
- Attain knowledge of register organization and stack organization.
- Confer about the concepts of Micro programmed control codes, machine language and assembly language.
- Explain about the Input-Output Organization.

Course Title: Visual Programming and Database Management System

- Understand database concepts and structures and query language
- Understand the E R model and relational model
- To design and build a simple database system and demonstrate competence with the fundamental tasks involved with modeling, designing, and implementing a DBMS
- Understand Functional Dependency and Functional Decomposition.

- Apply various Normalization techniques
- Describe the concept of visual programming
- Analyze how to solve a problem using looping, conditionals and functions.
- Build VB program using controls
- Demonstrate the concept of event-driven programming in Visual Basic applications
- Explain the concept of arrays and data file

Course Title: Visual Programming – Practical

- Explain the concept of basic VB programming
- Demonstrate calculation using mathematical functions.
- Create a VB program using MDI forms.
- Design the event-driven program
- Illustrate VB program with database connection
- Build and debug applications using Visual Basic that runs under Windows operating system

Course Title: Linux Programming

- Understanding of Linux operating system and architecture
- Acquire Knowledge of Linux files system/file handling, command line interpreter
- Explain basic Linux commands
- Analyze and apply various filters and pipes
- Familiarize with VI Editor
- Write simple shell scripts

Course Title: Data Communication & Networking

- Independently understand basic computer network technology.
- Understand and explain Data Communications System and its components.
- Identify the different types of network topologies and protocols.
- Enumerate the layers of the OSI model and TCP/IP. Explain the function(s) of each layer.
- Identify the different types of network devices and their functions within a network
- Understand and building the skills of subnetting and routing mechanisms.
- Familiarity with the basic protocols of computer networks, and how they can be used to assist in network design and implementation.

Course Title: Web Programming with PHP and MySQL

- Explain the basic concept of PHP
- Demonstrate the arrays and functions in PHP
- Create a sample application using session and cookies.
- Identify My SQL tools and databases.
- Design and manipulate tables using DDL and DML
- Analyze a queries in My SQL
- Connect a PHP with My SQL and process the result set.

Course Title: Web Programming with PHP and MySQL - Practical

- Design a simple web page using PHP
- Demonstrate the basic programming techniques
- Create a Sessions and Cookies.
- Implement the validation concept using user input.
- Design a table with constraints
- Build a PHP program with My SQL Database.

Course Title: Software Engineering

- Identify and define the problem to be solved
- Plan the development process through software life cycle models
- Predict and estimate software cost
- Analyze and prepare software requirement specification
- Select languages and processors for requirement specification
- Compare and select software design techniques
- Fix and review milestones, walkthrough and inspection
- Implement the software as per standards and guidelines
- Assure quality of software product
- Verify and validate software product

Course Title: Data Mining

- Demonstrate advanced knowledge of data mining concepts and techniques
- Identify appropriate data mining algorithms to solve real world problem
- Compare and evaluate data mining techniques like classification, prediction, clustering and association rule mining.

- Explain the analyzing techniques of various data
- Evaluate various mining techniques on complex data objects
- Determine whether a real world problem has a data mining solution

Course Title: Software Testing

- Identify software development life cycle models
- Analyze various testing methods like white box, black box testing and integrated testing
- Compare various testing methodologies such as system acceptance testing, performance testing and regression testing
- Apply object oriented system testing
- Analyze usability and accessibility of testing organizational structure of testing teams
- Demonstrate the steps involved in planning, managing , executing and reporting test
- Analyze and compare testing metrics

Course Title: Mini Project

- To understand the programming language concepts and basics of Software Development Life Cycle model for the implementation of the project.
- To plan, analyze, design and implement a software project using various models
- To learn to work as a team and to focus on getting a working project done within a stipulated period of time.
- Gain confidence to implement small ideas into real life working software projects through testing.
- To empower themselves to present project report, etc.

Course Title: Analysis of Algorithms and Data Structures

- Understanding basic deas about Algorithms and apply design principles and concepts to algorithms. Analysis the efficiency of algorithms using time and space complexity theory.
- Discuss the computational efficiency of the principal algorithms for sorting and searching.
- Choose among alternative data structures to solve specific data-representation and algorithmic problems.

- Students will be able to define basic static and dynamic data structures and relevant standard algorithms for them: stack, queue, linked lists, trees, graphs, heap, priority queue, hash tables, sorting algorithms.
- Student will be able to handle operations like searching, insertion, deletion, traversing mechanism etc. on various data structures.

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

- Discuss various searching, sorting algorithms.
- Able to store, manipulate and arrange data in an efficient manner by implementing the algorithms by doing coding.
- Choose appropriate data structure as applied to specified problem definition.
- Have practical knowledge on the application of data structure, and the handle operation like searching , insertion ,deletion, update on various data structure.
- Able to implement queue and stack using arrays and linked list .Implementation of tree traversing and graph traversing are the other things to be done by them.

Course Title: Programming in JAVA

- Discuss basic object oriented concepts
- Utilize branching and looping for decision making
- Compare and Revive class through structures of C programming
- Demonstrate object oriented programming through real time entities
- Apply string buffer class to provide flexible memory management
- Create own packages and handle runtime errors by exception handler
- Explain how multitasking is achieved and processor efficiency is improved by multithreading
- Compare and analyze I/O streams
- Create web site
- Use utility packages
- Demonstrate GUI through awt controls
- Design event-driven programming

Course Title: Programming in Java Practical

- Revive basic programming like arithmetic operation and decision making statements

- Apply object oriented concepts class and object
- Develop programs using recursive method
- Demonstrate polymorphism through method overloading and method overriding
- Compare different types of inheritance in Java language
- Illustrate multithreading
- Handle runtime errors using Exception handling
- Create basic applet programs
- Design web page by using different layouts and awt controls

Course Title: Problem Solving using C Programming

- Predict and Analyze problem definition
- Design and Formulate algorithm for solving problem
- Design Programming using statements
- Demonstrate Control flow verification
- Explain importance function in avoidance of code redundancy
- Revive Data handling using storage classes
- Discuss manipulation of Array
- Design Real time entities through structure
- Compare static and dynamic allocation using Arrays and Pointers
- Compute external file data through file handling methods

Course Title: Problem Solving using C Practical

- Demonstrate calculator through arithmetic operators
- Illustrate Conditional statements using ‘if’ statements
- Demonstrate logical and relational operators using Condition statements
- Illustrate iteration using ‘for, while and do..while ‘statement
- Demonstrate branching statement through ‘switch’ statement
- Demonstrate and compute Fibonacci series using function
- Demonstrate factorial of number using recursive function

Course Title: Non Major Elective: HTML Practical

- Design webpage with various text formats
- Design webpage with ordered and unordered list

- Build web pages with tables
- Demonstrate web pages with background and foreground images
- Build web page with internal and external linking
- Design applications to view more than one web page in a single window using frame tag
- Create forms
- Create Simple websites

Course Title: Analysis of Algorithms and Data Structures

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

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

- Illustration of iterative algorithmic technique with insertion sort, bubble sort and selection sort
- Demonstrate divide and conquer algorithm using quick and merge sort
- Explain algorithmic technique backtracking using heap sort
- Implement stack and apply stack for applications like postfix expression and evaluation of expressions
- 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

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

16. B.Sc (Information Technology) Programme 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 Outcome:

Course Title: Programming in C & Linux

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

Course Title: Programming in C &Linux LAB

- Read, understand and trace the execution of programs written in C language.
- Write programs that perform operations using derived data types.
- Develop conditional and iterative statement to develop c program.
- Implement Programs with arrays, function and perform various arithmetic operations.
- To execute various LINUX commands on a standard LINUX Operating system.
- To execute shell programming on LINUX OS.

Course Title: Computing Skills

- Recognize when to use each of the Microsoft Office programs to create professional and academic documents.
- Use Microsoft Office programs to create personal, academic and business documents following current professional and/or industry standards.
- Apply skills and concepts for basic use of computer hardware, software, networks, and the Internet in the workplace
- Solve common business problems using appropriate Information Technology applications and systems.

- Utilize the Internet Web resources and evaluate on-line e-business system.
- Describe the usage of computers and why computers are essential components in business and society.

Course Title: Programming in Java

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

Course Title: Programming in Java Lab

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

Course Title: HTML Lab

- Understand basic concepts in HTML.
- Insert and format text and create basic web pages.
- Implement a variety of hyperlinks to connect pages and communicate with users via email link.
- Insert and control images on a web page.
- Apply CSS styles to some page elements.
- Create, modify and format a basic layout.

Course Title: Design and Analysis of Algorithms

- Define the basic concepts of analyze and the performance of algorithms.
- Discuss various algorithm design techniques for developing algorithms.
- Discuss various searching, sorting and graph traversal algorithms.
- To find the shortest path in multistage graph method.
- Using the search techniques find the solution for Depth First Search and Breadth First Search.
- Classify the different algorithm design techniques for problem solving

Course Title: Data Analysis using Spread Sheet

- Group cells and use outlines to manipulate the worksheet; protect data in worksheets and workbooks.
- Use of advance Excel Formula.
- Use of If conditions with advance Excel functions.
- Use a variety of data validation techniques, use advanced filters to analyze data in a list
- Share workbooks with other users

Course Title: Data Analysis using Spread Sheet lab

- Understand Excel basic functions and charts.
- To work with mathematical text and date function.
- Implements sorting and filtering concepts in Excel.
- To work with Pivot tables.
- To share the workbook using VBA Macros.

Course Title: Operating System

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

Course Title: Python Programming

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

Course Title: Database Management System

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

Course Title: Python Programming Lab

- Describe the Numbers, Math functions, Strings.
- Express different Decision Making statements and Functions.
- Interpret Object oriented programming in Python.
- To program with the concepts of List, Tuples and Dictionaries in Python.
- Understand and summarize different File handling operations.

Course Title: Word Press

- Create a functional multi-page website using Word Press on a remote server.
- Use basic HTML and CSS to edit content and modify formatting in a Word Press website.
- Installing , configuring and plugging widgets.

- Able to demonstrate effective use of navigation on the site to enhance usability.
- Managing site content using Categories and tags.
- Choose the topic and design a wireframe, set site goals, identify target audience, and create a colour scheme.

Course Title: Big Data Analytics

- Understand the key issues in big data management and its associated applications in intelligent business and scientific computing.
- Acquire fundamental enabling techniques and scalable algorithms like Hadoop; Map Reduce and NO SQL in big data analytics.
- Interpret business models and scientific computing paradigms, and apply software tools for big data analytics.
- Achieve adequate perspectives of big data analytics in various applications like recommender systems, social media applications etc.
- Modelling and design of data warehouses.
- Data mining tool and practical experience of applying data mining algorithms

Course Title: Data Science Using R

- Recognize and make appropriate use of different types of data structures.
- Use R to create sophisticated figures and graphs.
- Identify and implement appropriate control structures to solve a particular programming problem.
- Design and write functions in R and implement simple iterative algorithms.
- Cleaning and restructuring **data using** the grammar of **data** manipulation.
- Exploratory **data** analysis and statistical distributions.

Course Title: R Programming Lab

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

Course Title: Software Project Management

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

Course Title: E-Commerce

- Understand the Electronic Commerce Environment. Analyse the different Modes of E-Commerce
- Apply Safe Electronic Commerce Approaches using Secure Protocol.
- Analyse different Payment Schemes available in E-Commerce Environment
- Identify and Manage Security Risks and Threats in E Commerce Environment
- Use secure E-Mail Technologies and Message Handling Techniques for Electronic Commerce

Course Title: NOSQL

- Master the basics of SQL and construct queries using PL/SQL efficiently and apply object oriented features for developing database applications.
- Compare and Contrast NoSQL databases with each other and Relational Database Systems
- Critically analyse and evaluate variety of NoSQL databases.
- Demonstrate the knowledge of Key-Value databases, Document based Databases, Column based Databases and Graph Databases
- Demonstrate competency in selecting a particular NoSQL database for specific use cases.

Course Title: Software Engineering

- Understand and demonstrate basic knowledge in software engineering.
- Identify requirements analyze and prepare models.
- Plan, schedule and track the progress of the projects.

- Design & develop the software projects.
- Identify risks; manage the change to assure quality in software projects.
- Apply testing principles on software project and understand the maintenance concepts.

Course Title: UI Programming

- Identify and define key terms related to user interfaces and user interface design and implementation.
- Identify and describe various types of computer users and computer use contexts.
- Identify and describe various types of user interfaces.
- Describe and explain the user interface design process.
- Identify and describe common abstract user interface components, such as radio buttons and group boxes.
- Identify and describe principal Java Swing classes used to realize common user interface components.

Course Title: Cloud Computing

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

- Demonstrate ability to formulate most suitable mathematical problems for real-time occurrences

- Enhanced critical thinking, analytical and computational skills necessary in today's society
- Develop the ability to understand, develop the mathematical concepts both numerically and graphically and enhance problem solving skills.
- Provide for professional cadres in the field of mathematics to support national development programs within public and higher education institutes.
- Built ability to contemplate latest scientific research techniques in the field

B.Sc Mathematics Course Outcome

Course Title: Algebra

- Model and answer questions pertaining to real world situations, using linear equations.
- Demonstrate the transition from arithmetic expressions to algebraic expressions.
- Connect a linear graph to its equation and to its representations in functional and verbal form.
- Perform operations on polynomials.
- Solve polynomial, logarithmic and/or exponential equations, and interpret their solutions.
- Connect functions and conics to their visual, verbal, or symbolic representation.
- Provide a detailed analysis of the graph of a function.
- Demonstrate understanding of the notation and algebra of functions.

Course Title: Differential Calculus

- Solve an applied rate of change problem.
- Demonstrate understanding of the relationship between a function and its derivatives.
- Find a derivative by hand using basic differentiation rules.
- Use differentiation to solve an optimization and/or a marginal analysis problem.
- Describe an applied situation in which an output value depends on two or more input values.
- Demonstrate understanding of the difference between average rates of change and instantaneous rates of change.
- Estimate the derivative at a point on the graph of a function and interpret its meaning within the context of a life science application.
- Apply the fundamental theorem of calculus to a life science application.

Course Title: Trigonometry

- Demonstrate understanding of the various definitions and properties of the six trigonometric functions and their inverses.
- Connect the graphical and symbolic representations of transformations of the trigonometric functions.
- Solve equations involving trigonometric functions.
- Evaluate the trigonometric functions at standard angles measured in degrees or radians, without the use of a calculator.
- Use trigonometric functions to solve application problems involving triangles, and interpret the solutions.
- Use identities to verify trigonometric identities or to simplify trigonometric expressions.

Course Title: Number Theory

"Mathematics is the queen of the sciences and number theory is the queen of mathematics." Carl Friedrich Gauss

- Demonstrate knowledge and understanding of topics including, but not limited to divisibility,
- Prime numbers, congruence's.
- Learn methods and techniques used in number theory.
- Use mathematical induction and other types of proof writing techniques in an appropriate manner.
- Prove results involving divisibility and greatest common divisors;
- Apply Euler-Fermat's Theorem to prove relations involving prime numbers;
- Apply the Wilson's theorem.

Course Title: Analytical Geometry

- Students will be able to write equations of lines, circles, and conics in 2D space and to identify these curves from their equations.
- Students will be able to write equations of lines, planes and sphere in the 3D-space and to identify lines and planes from their equation.
- Students will be able to use rectangular and polar coordinates in 2D-space.
- Students will be able to use rectangular, cylindrical, and spherical coordinates in 3D-space.
- Students will be able to perform translations and rotations in 2D-space.

- Compute the distance between points, the distance from a point to a line, and the distance from a point to a plane in the three-dimensional coordinate system.
- Sketch and describe regions in space.
- Identify and describe quadratic surfaces.

Course Title: Differential Equations and Laplace Transforms

- Model real-world situations using differential equations, solve the equations, and interpret the solutions.
- Solve an ordinary differential equation (ODE) using an appropriate method.
- Use appropriate technology to solve, approximate the solution of, or visualize the solution of an ODE that cannot be solved using traditional methods.
- Apply the fundamental concepts of Ordinary Differential Equations and Partial Differential Equations and the basic numerical methods for their resolution.
- Solve the problems choosing the most suitable method.
- Use computational tools to solve problems and applications of Ordinary Differential Equations and Partial Differential Equations.
- Formulate and solve differential equation problems in the field of Industrial, Organization Engineering.

Course Title: Integral Calculus

- Find areas of plane regions, surface areas, and arc lengths.
- Find volumes of surfaces of revolution using the disk, washer, and shell methods.
- Find derivatives and integrals for logarithmic and exponential functions and for the inverse trigonometric functions.
- Demonstrate ability to integrate more complicated functions using standard methods of integration, including integration by parts, trigonometric substitutions, partial fractions, and tables.
- Solve basic differential equations namely, separable and linear differential equations.
- Judge the reasonableness of a solution and justify all processes used.

Course Title: Mathematical Statistics

- The difference between qualitative and quantitative data, be able to organize the data and present a meaningful overview of the data through the use of frequency distributions.

- Compute the measures of central tendency (i.e. the mean, median and mode) and measures of dispersion (i.e. the variance, standard deviation and coefficient of variation)
- Compute conditional probabilities directly and using Bayes' theorem, and check for independence of events.
- Set up and work with discrete random variables. In particular, understand the Bernoulli, binomial, geometric and Poisson distributions.
- Work with continuous random variables. In particular, know the properties of uniform, normal and exponential distributions.
- Compute the covariance and correlation between jointly distributed variables.
- Know what expectation and variance of a random variable and be able to compute them.

Course Title: Statics

- Determine the components of a force in rectangular or non-rectangular coordinates.
- Determine the resultant of a system of forces.
- Draw complete and correct free-body diagrams and write the appropriate equilibrium equations from the free-body diagram.
- Determine the support reactions on a structure.
- Determine the connection forces in trusses and in general frame structures.
- Determine the internal reactions in a beam, draw correct shear-force and bending moment diagrams, and write equations for the shear-force and bending moment as functions of position along the beam.
- Analyze systems that include frictional forces.
- Locate the centroid of an area.
- Calculate the second moment of an area, calculate the principal second moments of an area.

Course Title: Algebraic Structures

- Explain the fundamental concepts of group theory and finite field theory.
- Use Lagrange's Theorem to analyze the cyclic subgroups of a group.
- Explain the significance of the notion of a normal subgroup, and of a simple group
- Describe the structure of finite Abelian groups.
- Do computations in specific examples of finite fields.
- Demonstrate understanding of and the ability to work within various algebraic structures.
- Demonstrate ability to form and evaluate conjectures.

Course Title: Real Analysis

- Describe fundamental properties of the real numbers that lead to the formal development of real analysis;
- Comprehend rigorous arguments developing the theory underpinning real analysis;
- Demonstrate an understanding of limits and how they are used in sequences, series, differentiation and integration;
- Construct rigorous mathematical proofs of basic results in real analysis;
- Appreciate how abstract ideas and rigorous methods in mathematical analysis can be applied to important practical problems.

Course Title: Dynamics

- Velocity and acceleration of relative motion; Rectilinear equations.
- Parameters defining the motion of mechanical systems and their degrees of freedom.
- Application of the vector theorems of mechanics and interpretation of their results.
- Newton's laws of motion and conservation principles.
- A sound knowledge of Simple Harmonic Motion, Projectiles, Impact and Moment of Inertia.

Course Title: Programming Language 'C' with Practical

- Read, understand and trace the execution of programs written in C language.
- Write the C code for a given algorithm.
- Implement Programs with pointers and arrays, perform pointer arithmetic, and use the pre-processor.
- Write programs that perform operations using derived data types.

Course Title: Operations Research - I

- Explain the meaning of operations research and know the various techniques of operations research.
- Formulate operation research models to solve real life problem.
- Apply the techniques used in operations research to solve real life problem in various industries.
- Select an optimum solution with profit maximization;
- Solve transportation problems.
- Proficiently allocating scarce resources to optimize and maximize profit

Course Title: Linear Algebra

- Use visualization, spatial reasoning, as well as geometric properties and strategies to model, solve problems, and view solutions, especially in R^2 and R^3 .
- Conceptually extend these results to higher dimensions.
- Work collaboratively with peers and instructors to acquire mathematical understanding and to formulate and solve problems and present solutions
- Demonstrate ability to work within vector spaces and to distill vector space properties.
- Demonstrate ability to manipulate linear transformations and to distill mapping properties.

Course Title: Complex Analysis

- Justify the need for a Complex Number System and explain how it is related to other existing number systems
- Define a function of complex variable and carry out basic mathematical operations with complex numbers.
- Understand the significance of differentiability for complex functions and be familiar with the Cauchy-Riemann equations;
- Evaluate integrals along a path in the complex plane and understand the statement of Cauchy's Theorem;
- Compute the Taylor and Laurent expansions of simple functions, determining the nature of the singularities and calculating residues;
- Use the Cauchy Residue Theorem to evaluate integrals and sum of series.

Course Title: Operations Research – II

- Explain the meaning of operations research and know the various techniques of operations research.
- Apply the techniques used in operations research to solve real life problem in various industries.
- Determine critical path analysis to solve real life project scheduling time and timely delivery.
- Use critical path analysis and programming evaluation production and review techniques for timely project scheduling and completion.
- Solve problems in Game theory, Inventory models and Queueing theory models.

Course Title: Graph Theory

- Demonstrate knowledge of the syllabus material
- Write precise and accurate mathematical definitions of objects in graph theory;
- Use mathematical definitions to identify and construct examples and to distinguish examples from non-examples;
- Validate and critically assess a mathematical proof;
- Use a combination of theoretical knowledge and independent mathematical thinking in creative investigation of questions in graph theory;
- Reason from definitions to construct mathematical proofs.
- Write about graph theory in a coherent and technically accurate manner.

18. B.Sc Physics Programme Specific Outcome

- The study of matter and its motion and behaviour through space and time, along with related concept.
- The programme tests the validity of Physical theories in a Scientific Method.
- Using a methodical approach to compare the implications of a theory with the conclusions drawn from its related experiments.
- Observations are used to test the validity of a theory in a logical, unbiased, and repeatable way.
- Numerical methods and mathematical approach involved in physics leading to research

B.Sc Physics Course Outcome

Course Title: Mechanics and Properties of Matter

- Understand the basic mechanism behind collisions and material properties.
- Identify the materials suitable for construction of buildings, based on the moduli of elasticity.
- Analyse the materials strength in terms of their size and shape.
- Detail fluid dynamics that give the fundamental knowledge over many practical applications
- Calculate the dynamic properties of materials experimentally.

Course Title: Thermal Physics and Acoustics

- Understand different measurement techniques in thermometry, laws of thermodynamics and heat engines.
- Calculate Transmission of heat through different media.
- Understand the basic oscillatory motion
- Measure the intensity of sound and hence can analyse the Acoustics of buildings.
- Produce ultrasonics experimentally in different ways

Course Title: Optics and Spectroscopy

- Distinguish Geometrical and Physical aspects of light.
- Construct optical instruments
- Understand the defects associated with the lens and correcting methods
- Analyse the UV-IR spectrums
- Get the knowledge of Spectroscopy that helps to extract the dynamic information about the molecule

Course Title: Electricity and Magnetism

- Understand fundamental laws of electricity and magnetism
- Know more about Electrolysis and thermoelectricity
- Analyse the DC and AC circuits with different components like resistors and reactors(Inductor and Capacitor)
- Basic properties of ferro magnetic substances
- Discuss the elements of earth's magnetic field
- Solve the problems related to magnetic effects of electric current

Course Title: Atomic Physics

- The knowledge to measure the specific charge of electron by different methods
- A Complete study of atomic structure and emission of spectral lines
- A detailed learning of "Photon to Electron" and "Electron to Photon" through Photo electric effect and X rays
- Good knowledge on X ray spectroscopy
- Through knowledge in atomic models, the couplings and other spectral series which helps them to pursue their higher studies.

Course Title: Nuclear Physics and Particle Physics

- Detailed learning of Nucleus with their empirical models
- Overall view of Nuclear reactions and nuclear reactors with radioactive laws and radiation measuring techniques
- Sound knowledge in elementary particles and their conservation laws
- Knowledge about particle- antiparticle, decay processes and their outcomes.
- Basic idea of interaction between fundamental particles.

Course Title: Solid State Physics and Electronics

- Detail the Crystal structure and associated defects.
- Complete the study of Dielectrics and Semiconductors
- Understand of Semiconductor devices and their applications
- understand the functioning of a transistor as an amplifier.
- Explain the behaviour of solids with their magnetic properties.

Course Title: Electromagnetism

- Detail of Magnetic effects of current in circular coils and Solenoids
- Understand the principle and working of Ballistic Galvanometer
- Analyse the Dc and Ac motor functioning with serial and shunt wound systems
- Measure the elements of earths magnetic elements using Earth Inductor
- Complete the study of electromagnetic induction and its applications on electromagnetic machines
- Understand the Maxwell's equations of electromagnetic waves.
- Derive the velocity of electromagnetic waves in free space as well as in different mediums

Course Title: Numerical Methods

- To learn the methodology involved in computer computations.
- To solve simultaneous equations using matrix method.
- To understand statistics using curve fitting
- To find the solution of an algebraic, transcendental and differential equations.
- To do integration using interpolation techniques

Course Title: Relativity and Quantum Mechanics

- Understand the space - time concept through relativity
- Arrive at duality through matter waves
- Derive time dependent and independent Schrodinger equations
- Use different operators in solving quantum mechanical problems
- Find eigen values and eigen functions of free particle

Course Title: Mathematical Methods in Physics

- To use advanced mathematical methods and theories on various mathematical and physics problems.
- To develop the skill of problem solving ability.
- Use Matrices to solve simultaneous equations
- Solve quantum mechanical problems using special functions and polynomials.
- Understand the Fundamentals Classical mechanics and statistical mechanics for their higher studies
- To Formulate the Lagrangian and Hamiltonian equations for simple mechanical systems

Course Title: Integrated Electronics

- Through knowledge on different number systems
- The skill to simplify the logics using Karnaugh map and Boolean algebra
- Detailed knowledge in storing and retrieving a data through mux and demux
- The skill to customize the counters to the need through serial and parallel counters
- The ability to solve simultaneous equations and differential using Operational amplifier
- The Understanding of digital to analog (DAC) and analog to digital (ADC)

Course Title: Microprocessor 8085 and Microcontroller 8051

- Describe the functions of each pin and internal hardware of 8085 microprocessor
- Write simple programs with different logics for specific tasks
- Develop the knowledge of interfacing peripheral devices to 8085 microprocessor
- Distinguish the software of personal computers from 8085 microprocessor
- Appreciate the use of interrupts and switching of program sequence to discharge specific tasks
- Explain the use of microcontrollers in the day to day applications

19. B.Sc Plant Biology and Plant Biotechnology Programme Specific Outcome

- Demonstrate an understanding of biology at the level of molecules, cells, systems, organisms and ecosystems
- 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
- 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
- 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
- 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.
- 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
- 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 Outcome

Course Title – Algae & Bryophytes

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

Course Title – Fungi, Plant Pathology and Lichenology

- Describe the general characteristics of Fungi and Algae and its ultrastructure. Identify advantages and disadvantages of these organisms.
- Discuss the Biodiversity, Morphological diversity and economic importance of Fungi
- Explain the prevention and control measures of plant diseases and its effect in agriculture
- Examine the plant diseases and its pathogens for crop management in agriculture
- Evaluate the ecological significances of lichens and to gain knowledge on Fruticose lichens

Course Title - Algae and Bryophytes Practical

- Outline the classification of Algae and Bryophytes upto order
- Discuss the biological significance of the given specimen
- Identify the morphology and anatomy of Algae and Bryophytes
- Investigate their significance and relate structure and function, draw and label diagrams of the specimen
- Compare the cellular drawing
- Identify and familiarize the specimens during field visit

Course Title - Fungi, Plant Pathology and Lichenology Practical

- Outline the classification of the specimen upto order
- Discuss the biological significance of the given specimen.
- Identify the morphology and anatomy of Fungi through dissection
- Investigate their significance and relate structure and function, draw and label diagrams of the specimen
- Identify the Plant diseases, sign and symptoms of pathogens and disease, integrated methods of disease management, use of biological and chemicals in disease management.
- Identify and familiarize the Plant disease, their causative agent during field visit

Course Title - NME - Nursery and Landscaping

- Explain the principles of vegetative propagation.
- Relate theoretical and practical knowledge to establish home gardens scientifically.
- List and categorize types of soils, chemicals, fertilizers, and Integrated Pest Management.
- Outline a fundamental understanding of plant identification, selection, use, and maintenance of plant material best suited for conventional and sustainable landscapes.
- Relate and familiarize with grafting, layering and seedling culture

Course Title - NME – Mushroom Cultivation

- Explain cultivation of different types of edible Mushrooms
- Assess Climatic requirement for Mushroom cultivation
- Complete the requirement of composting for Mushroom cultivation & different methods of composting
- Examine the diseases affecting the Mushrooms and develop their control measures. Expertise in harvesting methods of Mushrooms for cultivation
- Describe the grading, packing and storing methods of Mushrooms and to know about preparation of its value added products

Course Title -Anatomy, Micro technique and Embryology of Angiosperms

- 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).
- Compare the structural differences among different taxa of vascular plants.
- Explain the techniques of microscopic slides making, microscopic measurements and methods of identification of some organic compounds in **plant** cells.
- Explain the making of temporary microscopic slides, using different cutting techniques and permanent microscopic slides using paraffin method.
- To Prepare large plant material through dry, wet, and pressing method detect the presence of different groups of organic compounds in plant
- 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

- To describe the morphological, reproductive and anatomical structure of Pteridophytes and Gymnosperms.
- Outline the salient features of stellar evolution and relate the latest trends in classification, vegetative morphology and reproductive biology of Gymnosperms.
- Describe the features and reproductive adaptations of conifers and other gymnosperms.
- To explain about fossils and fossilization and to understand about geological time scale.
- 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

- To Identify the Pteridophytes morphology and anatomy of both vegetative and reproductive parts through dissection
- To Identify the Gymnosperm morphology and anatomy of both vegetative and reproductive parts through dissection
- To Identify the fossil genera of Pteridophytes and Gymnosperms
- To Predict the types of fossilization of plants
- To Identify and familiarize the lower vascular Plants distributed in any ecosystem

Course Title - Anatomy, Microtechnique and Embryology of Angiosperms Practical

- Identify meristems, tissues, stem and root through permanent slides and photographs.
- Identify the Structure and development of dicot and monocot embryos through dissection.
- Examine the steps involved in Smear/Squash Method and from Prepared Slides.
- Identify the ovule types and developmental stages of embryo sac using permanent slides
- Identify the Types of endosperm and seed dispersal mechanisms by specimen

Course Title - Morphology, Taxonomy of Angiosperm & Economic Botany

- Describe the major groups of vascular plants and their phylogenetic relationships.
- List the basic principles involved in classification, naming and identification of angiospermic plants.
- To Find the unknown plants to species level with help of Taxonomical tools such as Keys and Monographs
- Describe morphological and floral characters in technical terms of given Families.
- 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

- Describe the level of molecules, cells, systems, organisms and ecosystems
- 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
- Compare the organization of prokaryotic and eukaryotic cell, structure and function of cell organelles including cell division.

- Discuss the molecular mechanisms by which DNA controls development, growth or morphological characteristics of organisms and relate gene regulation
- Define Geological Time Scale and describe phytogeographical Realms
- Describe the Theory of Evolution considering Darwinism and Modern Synthetic Theory

Course Title - Microbiology

- 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
- Explain the practical skills in fundamental microbiological techniques and to gain knowledge on microbial growth and sterilization techniques
- Classify and apply the scientific method of investigation and hypothesis testing and perform inoculating bacteria with different cultivation technique
- Investigate the role of microorganisms in production of industrial enzymes, antibiotics, biopolymer
- To explain the basic genetic systems of bacteria, bacteriophage and plasmids. 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

- Discuss the morphological and anatomical adaptations of hydrophytes, mesophytes and xerophytes .
- Explain interactions of various environmental factors .Describe ecological succession – causes, process and types of succession
- Explain biodiversity – threat, cause and conservation of biodiversity (In-situ and Ex – situ) Field visit to familiarize students with ecology of different sites.
- Describe pollution, types, causes symptoms and remedial measures and to describe the phytogeographical region of India.
- Compare the natural patterns and relationships between plants and their environment by organizing groups of plant species into functional vegetation categories.
- 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

- 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
- Identify observe and sketching the floral parts of the plants belonging to different families.
- To Find the Economic uses of plants and plant parts.
- Explain the steps involved in Smear/Squash Method and from Prepared Slides.
- Identify and familiarize the specimens during field visit
- Describe the Theory of Evolution considering Darwinism and Modern Synthetic Theory, evolutionary scientists and Geological time scale
- Demonstrate the process in remote Sensing, types of satellite mapping and vegetation mapping.

Course Title - Horticulture & Mushroom Cultivation

- Explain the Nursery management and plant propagation
- To list the horticultural practices and activities of large scale plant production.
- Explain horticultural skills and knowledge to operate various business entities found in the horticultural industry
- List a fundamental understanding of landscape construction, irrigation design and constructing conventional and sustainable landscapes
- List the requirement of composting for Mushroom cultivation & different methods of composting
- 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

- To Compare the classical Mendelian genetics, modified Mendelian theories like allelic and gene interactions including epistasis, complementary genes, multiple alleles, quantitative inheritance.
- Explain the mechanism of linkage and crossing over, chromosome mapping, sex determination in various organisms, sex linked inheritance, nuclear inheritance, population genetics
- 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

- Find the plant adaptation that are applicable to agricultural and natural systems.
- Recognize the importance of data collection and its role in determining scope of inference.

Course Title - Plant Physiology & Biochemistry

- Describe the characteristic features of water which helps in the biological systems, transpiration types, features and mechanisms.
- Explain the processes related to the ascent of sap, uptake of nutrients and translocation of sugars.
- Examine photosynthesis- (apparatus, process, regulation and assimilatory powers), Nitrogen fixation- (sites, genetic control and assimilation)
- List the role of phytohormones in plant growth, development, movement (types and feature), photo morphogenesis, seed germination and seed dormancy.
- Explain the plant metabolic reactions, components and functioning of Plant chemicals.

Course Title - Plant Biotechnology

- Describe the isolation and cultivation of economically important microbes plant cells.
- Explain tissue culture methods and study the suitable culture media and its composition.
- Relate the mechanisms of plant cell signaling and gene regulation.
- Discuss the different methods for transformation of plants or plant cells, including their specific advantages and applications.
- Relate plant biotechnology applications within forestry, agriculture, and production of bio products , in pharmaceuticals, tanneries, dairy and bio-fuels
- Demonstrate the role of transgenic plant in bioprospecting

Course Title - Herbal Botany

- Explain method for identification and authentication of herbal drugs
- Explain basic principles of traditional medicinal systems with method of preparation and standardization of Ayurvedic, Siddha, Unani formulations
- Describe benefits of various plants as nutraceuticals in ailments and also the herb-food interaction of various plant drugs
- Describe about herbs or natural origin drugs as raw materials for preparation of

cosmetics, excipients, conventional herbal formulation and novel dosage forms like phytosomes

- Explain methods for selection, processing of herbal drugs as raw materials for herbal drug preparation
- 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

- Discuss the basic principles of genetics, Law of Mendel, Gene interaction, Allelic and non-allelic genes.
- List Genetic Problems related to Transmission and Distribution of Genetic Material.
- Describe linkage and crossing over of genes, solving gene mapping problems. Identification of DNA in Plant Material
- Construct a histogram, pie chart and line diagram of plants within the plants.
- Describe more about the characteristics, techniques, principles and application of plant tissue culture
- Explain the main techniques of in vitro culture of plant cells & tissues.
- 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
- Identify Glucose and Protein Estimation
- Find the methods used for the bio-production of plant secondary metabolites.

Course Title: Course Title - Preservation of Fruits and Vegetables

- To acquaint with properties and role of various constituents in foods, interaction and changes during processing.
- Discuss the proper handling technologies of fruits and vegetables to reduce post-harvest losses
- List the principles and methods of preservation of fruits and vegetables into various products
- To acquaint with principles of different techniques used in processing and preservation of foods

- 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

- Explain the structure and reproduction of certain Cryptogams and Gymnosperms
- Relate the organization of prokaryotic and eukaryotic cell, structure and function of organelles and cell division.
- Explain the plant cell, tissues, and internal structures of stem, root and leaves.
- Comparative study of the different plant groups with representative examples including Virus, Bacteria, Algae, Fungi, Lichens, Bryophytes, Pteridophytes and Gymnosperms
- Demonstrate the simple tissues from fresh plant material and prepare permanent slides. Study of simple and complex tissues (xylem)

Course Title - Allied Botany – II

- Describe the major groups of vascular plants and their phylogenetic relationships. Understand the basic principles involved in classification, naming and identification of Angiosperms
- Explain photosynthesis - (apparatus, process, regulation and assimilatory powers), Nitrogen fixation (sites, genetic control and assimilation)
- Explain interactions of various environmental factors. Describe ecological succession – causes, process and types of succession
- Explain the embryo types and anatomy of the embryo and structure of ovule
- Discuss about the characteristics, techniques, principles and application of plant tissue culture

Course Title - Allied Botany – I & II Practical & I

- 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
- To Identify the Pteridophytes morphology and anatomy of both vegetative and reproductive parts through dissection
- To Identify the Gymnosperm morphology and anatomy of both vegetative and reproductive parts through dissection

- Identify meristems, tissues, stem, root through permanent slides and photographs.
- Identify the Structure and development of dicot and monocot embryos through dissection.
- Identify observe and sketching the floral parts of the plants belonging to different families.
- 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 Programme Specific Outcomes:

- Students will be able to understand the various formats of Visual Communication
- Students will be able to corelate various visual formats with communication through visual means
- Students will be able to explain basic concepts of no verbal communication. Digital arts and designs, moving and still images, web based communication etc.
- Students will be able to understand the significance of visual communication in relation to human and society

20. B.Sc Visual Communication Course Outcome:

Course Title: Visual Art

- Have a very good knowledge of basics of drawing , material handling and understanding.
- Understand the light and dark and transition of the total value.
- Understand the usage of positive and negative space in a design composition.
- Gaining the composing knowledge of landscape and cityscape drawing and painting.
- Understand the face and human feature and its measurements.

Course Title: Basic Photography

- Understand the key role of photography for Communication and also about the characteristics of Light and its principles.
- Acquire the significant knowledge about the internal elements and various functions of different types of camera.
- Assess the external elements that support for taking better photographs.
- Get the basic understandings about the Digital exposing, lights and modifiers.

- Acquire an in-depth knowledge about the exposure, depth-of-field and composition.
- Know the importance of Photo Journalism and about its various fields.

Course Title: Visual Literacy

- Know about the importance of art and design knowledge.
- Acquire the knowledge about how the Media industry requirement and manage skills accordingly.
- Understand the real/pseudo reality in the media on all aspects.
- Understand about the Media Audience and about the importance of alignment and segmentation.
- Acquire an in-depth knowledge about the culture, sub-culture and culture and practice in current scenario

Course Title: Elements of Film Studies

- Students will have critical understanding of the technological and creative processes involved in the writing and production of film works of all types.
- 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.
- Students will be able to conduct film research and compose cogent, persuasive, and valid essays about film.
- 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.
- To examine some of the major methodological issues in film production

Course Title: Visual Graphics

- Photoshop is a powerful and popular image editing software that helps you to apply various effects easily and get consistent results
- It has many features that are hardly available in other photo editing software
- Logo Designing, creative art, blog images and for many other things professionally
- Web banner is a leading business.
- Photo restoration is used for rebuilding the old photos
- Boucher, poster & multimedia presentation development
- 3d texture development, Story board development

Course Title: Visual Design

- Gain knowledge about graphic design - its history and evolution along with its technology, and concepts.
- Have a very good knowledge about Principles of Graphic Design.
- Understand the relationship of graphic design to other disciplines and to society.
- Have a thorough knowledge of creating pattern design.
- Have detailed understanding of Typography through principle for typography

Course Title: Media Culture and Society

- Understand the Media culture and the functions of media on individual.
- Cultural approach and studies of culture film, television, Music.
- Understand the Rural and urban culture aspects and the changes happened in Society because of media.
- Role of Media in terms of changes brings in the society. Effects of social media and the technology changes in the present scenario Which has happened is analysed by the students.

Course Title: Television Production Theory

- Raising of Professional standards in Television Production.
- Creating awareness about responsive and responsible in TV Production.
- Continuing review of professional codes and ethics set by the professional and regulatory bodis for Television training.
- Emphasizing the need for raising the standards for Television production.
- Understand the ability to effectively apply oral presentation techniques in various communication settings in Television Production.
- Solutions to production problems using the major theories and concepts in their respective disciplines
- Demonstrating proficiency in using the current and evolving hardware and software applications

Course Title: Digital Advertising

- Understand the nature and scope of Advertising.
- Plan and implement creative strategy, media strategy, and budgeting.
- Know the latest trends in advertising.

- Gain knowledge in Audio-visual commercials.
- Perceiving Visualization process.

Course Title: Script Writing (Practical)

- Express ideas fluently in standard screenwriting format at an advanced level.
- Craft character-based stories with clear conflicts at an advanced level.
- Analyse film and television structure at an advanced level.
- Workshop creative ideas at an advanced level.
- Students will complete full-length scripts that are geared toward a specific budget (whether Hollywood studio fare, student films, or anywhere in between).

Course Title: Photography

- Gain knowledge about handling the camera to shoot Landscapes, Monumental Photography and Seascape photography
- Gain knowledge about handling the camera to shoot photo Journalism, Photo Feature like any Social issues
- Gain knowledge about handling the camera to shoot Fashion Photography, Product photography, Industrial photography, Event Photography
- Gain knowledge about handling the camera to shoot Portray Humans and Monuments
- Gain knowledge about handling the camera to shoot Silhouette Photography, Special Effects, Freezing Movement Photography, Panorama

Course Title: Visual Text Analysis

- Understand the basic concepts on basic visual text and also the media organization in technical, ownership production.
- Understand about the signs and how it works in media as a main element in communication.
- Understand the term psychoanalysis and also the three stages of it and how directors use the term in films in different aspects.
- Political analysis of media will be learnt by them and the approach which was used before centuries for propaganda purpose.
- Understand the Practical application visual text analysis and its criticism.

Course Title: Audio Production Practical

- Understanding the role of sound in Television and Films
- Exploring the tools for sound recording and designing.
- Explore the selecting of proper equipment to achieve creative objectives.
- Building a foundation for managing the complex audio requirements of Field and Studio Production.
- Understanding the various process of laying sound tracks for films step by step.

Course Title: Multimedia

- 3D Architectural rendering
- Exterior, 3D Interior and 3D Architectural development
- Design 3D Mechanical modelling
- 3D models and it has great compatibility
- 3D computer graphics program for making 3D animations, models, games and images
- 3D Max has great conceptual modelling tools, large-scale environment creation
- 3D Max is used more for games while Maya is used for film work

Course Title: Media Ethics and Law

- Students will be able to understand the contribution of media towards society.
- Students will be able to uphold the values of Media and take its message forward.
- Students will be able to understand the laws that govern Media Industry.
- Students will be able to understand what is Media Ethics and Responsibilities.
- Students will be able to understand the operational part of the Laws that regulate the Media industry.

Course Title: Television Production (Practical)

- Acquire technical knowledge needed for audio visual content production
- Be able to run the work flow of shooting/recording, editing and broadcasting
- Be able to work in multi-camera productions and studio environment
- Be able to work in different stages of program production
- Be able to identify different program and broadcast formats
- Be able to develop and apply a program idea

Course Title: Visual Effects

- Live Action Effects (Key light)
- Matte Digital Animation
- ROTO Paintings
- Digital & Dynamic Effects (Match-Moving)
- Advance lighting effect
- Real time texture.
- Ad and film industry, corporate demo development.

Course Title: Understanding Film

- Know about our Indian Film History and contemporary trends in filmmaking.
- Acquire the significant knowledge about the various film movements.
- Differentiate narrative and non-narrative form in films.
- Understand the production process in detail.
- Acquire an in-depth knowledge about the techniques involved in generating concepts,
- Developing it as stories and writing effective screenplay.

Course Title: Media Organization

- Acquire detailed understanding of media organizations and its types.
- Bring out the differences between media as business and media as a social institution.
- Have an in-depth knowledge of how media organizations are managed.
- Gain clear idea of how print media works, its various functions and departments.
- 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.
- Also have a thorough knowledge of the strategies, strengths and legal arrangements of media organization.

Course Title: Advertising Photography

- Have a very good knowledge of various camera operation light meters and film
- Gain knowledge about – use digital camera image recording systems, memory cards
- Have detailed understanding about- to use point light source, wide light sources, light banks, soft boxes, honeycomb, and soft lights

- Understand the outdoor fashion and portrait lighting using Diffuser, reflector, mirror
- Have a thorough knowledge basic colour principles, including line shape hue, texture relationship to composition
- Gain knowledge about tools for the professional photographer advanced retouching manipulation

Course Title: Film Apperiscation

- Recognize types of films, their impact on society, and their roles in our lives
- Recall the concepts behind storytelling, Mize en Scène, and cinematography
- Identify ways sound contributes to movies
- List the roles of directors and critics in the film industry
- Identify types of movie genres and various editing styles

Course Title: Internship

- Giving an opportunity to explore various career possibilities in Visual communication
- Acquire the significant knowledge about the techniques involved in the indoor shoot.
- 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.
- Further develops practical skills in a real-world context
- Providing an opportunity to strengthen your portfolio or resume tape with practical experience and projects.

Course Title: Project

- Students are given an opportunity to explore various career possibilities in their field of interest
- Acquire the significant and produce an profile for them
- Opportunity to learn those disciplines, skills and attitudes, which can best or only be learned on the job, especially self-discipline, teamwork, responsibility, and initiative.
- Further develops practical skills in a real-world context
- Providing an opportunity to strengthen your portfolio or resume tape with practical experience and projects.
- The final outcome of the Programme is seen as the output of the knowledge gained for three years

21. B.C.A Program Specific Outcome

Knowledge and Understanding

- In the degree of Computer Applications (BCA), it helps a person to gain digitalized knowledge about machines.
- Students will be taught subjects which are related to the technological applications that are required in today's practical work field.
- 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
- 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.
- BCA Program Course helps a Student Develop the Programming Skills, Networking Skills, Learn Application Packages, Programming Languages, Modern Techniques of IT.
- 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.
- The BCA program also covers different mathematical papers and Operations research. So the students also gain knowledge and their applications about the same.
- The BCA program covers the hardware oriented papers like digital logic fundamentals, computer architecture, etc. This knowledge helps to student for assemble the PC.
- The BCA program covers the Microprocessor fundamentals. It is used to assemble a PC , enhancing an assembly language program.
- If you are an average student which is having to do something in software engineering, development or research

Intellectual Skills

- The course aims at inculcating essential skills as demanded by the global software industry through interactive learning process. This also includes team-building skills and personality development programmes.

- The programme enhances analytical and communication skill besides inculcating the virtues of self-study.
- The Curriculum has been designed to cater to the ever changing demands of information technology along with necessary inputs from the Industry.
- It prepares the students to obtain the positions as System Analysts, Systems Designers, Programmers and IT Managers in any field related to information technology.
- 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. It prepares graduate who will be successful professionals in industry, government, academia, research, entrepreneurial pursuit and consulting firms and contribute to the society as broadly educated, expressive, ethical and responsible citizens with proven expertise.

Professional and Practice Skills

- The program is designed to bridge the gap between the studies of computers and its applications. This aims to shape computer professionals with right moral and ethical values and can prepare students to face the challenges and opportunities in the IT industry by building strong foundations.
- Use appropriate tools and implement effective design to develop software application in a responsible manner.
- Implement testing and debugging for good working principle.

General Skills

- The general skills for a program should reflect the aims of the provisions that the students are expected to acquire during the program.
- The aims of a program in providing a student with a thorough grounding in the basics of a subject.
- Develop competent technical writing skills so as to enable the graduate to communicate business ideas to senior management and general public.
- The necessary technical, scientific as well as basic managerial and financial procedures to analyze and solve real world problems within their work domain.
- Clarity on both conceptual and application oriented skills in commerce, Finance & Accounting and IT Applications in Business context.

- Improved communication and business management skills, especially in providing tech support.
- Awareness on ethics, values, sustainability and creativity aspects.
- The ability and the mindset to continuously update and innovate.
- Analyze their own thinking in terms of clarity, accuracy, relevance, logic and fairness.
- Aided in aligning the learning experiences and assessment tasks that lead to those outcomes.
- Develop a clearly articulated argument to support a view and use it to justify one or more conclusions.
- Effective communication with diverse audiences in a variety of ways for different purposes.
- Collaboration and cooperation to complete an effective performance in group situations, using interpersonal skills.
- As team, members will reveal their commitment to the team through effective use of group problem-solving techniques.
- Ability to control their own thought process and behavior including self-regulation, critical thinking, and creative thinking.

B.C.A Course Outcome

Course Title: Programming in C & C++

- This course gives exposure to hands on training in C & C++ programming.
- The course familiarize the student with basic concepts of computer programming and developer tools.
- To present the syntax and semantics of the “C” and “C++” language as well as datatypes offered by the language.
- To allow the student to write their own programs using standard language infrastructure regardless of the hardware or software platform.

Course Title: C & C++ Programming Lab

- This course gives exposure to hands on training in C& C++ programming
- To familiarize the student with basic concepts of computer programming and developer tools.

- To present the syntax and semantics of the “C”& “C++” language as well as data types offered by the language.
- To allow the student to write their own programs using standard language infrastructure regardless of the hardware or software platform.

Course Title: Computing Skills – Practical

- Introduction to computers covers the basics of computers, classification of computers, hardware, software and uses of computers.
- 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.
- The file management covers, how to manipulate a folder such as create a folder, sub folder and perform the basic operations related to windows.
- 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.
- The Networks covers the basics of browsing and E-mail creation, sending and receiving a message.

Course Title: Java Programming

- Understandingoftheprinciplesandpracticeofobjectorientedanalysisanddesignintheconstructionofrobust,maintainableprograms which satisfy their requirements;
- Ability to implement, compile, test and run Java programs comprising more than one class, to address a particular software problem.
- Demonstrate the principles of object oriented programming;
- Demonstrate the ability to use simple data structures like arrays in a Java program.
- Understand the concept of package, interface, multithreading and File handling in java.
- Ability to make use of members of classes found in the Java API (such as the Math class).

Course Title: Java Programming Lab

- Understand programming language concepts, particularly Java and object-oriented concepts.

- Write, debug, and document well-structured Java applications
- Implement Java classes from specifications and effectively create and use objects from predefined class libraries
- Understand the behavior of primitive data types, object references, and arrays
- Apply decision and iteration control structures to implement algorithms
- Write simple recursive algorithms
- Implement interfaces, inheritance, and polymorphism as programming techniques and apply exception handling.

Course Title: HTML lab

- HTML is basically used for designing purposes; it is used to design webpages, interfaces for various mobile applications and web applications.
- The HTML programs used manipulate Text such as bold, italic, superscript, subscript, size font style etc.
- The HTML programs implement Multimedia tools like images, audio, and video,
- The HTML programs to connect various web pages easily through various tags.
- The HTML programs used connect the databases through linking tags. It also split the screen and displays various outputs.

Course Title: Software Testing

- To study the fundamentals and principles of software testing.
- To learn few techniques of testing.
- To understand the significance of testing.
- To learn the essentials of testing.

Course Title: Web Technology

- This course introduces the concepts of ASP, VB Script, Java Script.
- On completion of this course, a student will be familiar with client server architecture and able to develop a web application using java technologies.
- Students will gain the skills and project-based experience needed for entry into web application and development careers.

Course Title: Web Application Lab

- This course gives training in Web Designing and Applications.

- Design and implement dynamic websites with good aesthetic sense of designing and latest technical know-how's.

Course Title: Data Structure & Algorithms

- Demonstrate familiarity with major algorithms and data structures.
- Analyze performance of algorithms and choose the appropriate data structure and algorithm design method for a specified application.
- Determine which algorithm or data structure to use in different scenarios and be familiar with writing recursive methods.
- 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.
- Demonstrate understanding of various sorting algorithms, including bubble sort, insertion sort, selection sort, heap sort and quick sort.

Course Title: Financial Accounting

- Understand the role of accounting and its limitations.
- Prepare financial statements in accordance with Generally Accepted Accounting Principles.
- Demonstrate knowledge of each step in the accounting cycle
- Support at a basic level the recording and reporting of financial information for business
- Demonstrate an understanding the tally in accounts

Course Title: Personality Enrichment

- 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.
- Recognize their ethical responsibilities to their community, society, discipline, and profession based on various perspectives and associated standards of ethical communication.
- Demonstrate the ability to analyze a problem and devise a solution in a group.
- Demonstrate the ability to research, analyze, and reason from evidence to reach an effective conclusion or outcome.

Course Title: Mobile Application Development

- To understand concepts of mobile devices, Mobile OS Architectures, Android survival and basic apps.
- To understand android useful apps, underneath the frameworks and advanced topics.

Course Title: Operations Research with Big Data

- To give an overall idea about the various Optimization techniques and their usages.
- To give basic idea about Big Data Platform.

Course Title: Mobile Application Development Lab

- Setup the development environment.
- Create a sample android application.
- Understand the various parts of an android project.
- Use the Android Emulator.
- Install and Run the application on a physical device.
- Create a simple user interface.

Course Title: Cost and Management Accounting

- Understand the cost and management accounting techniques for evaluation, analysis and application in managerial decision making;
- Compare and contrast marginal and absorption costing methods in respect of profit reporting;
- Apply marginal and absorption costing approaches in job, batch and process environments.

Course Title: PHP Lab

- This course introduces the basic concepts of PHP Scripting Language.
- To develop web applications using basic PHP elements such as delimiters, control structures, operators, variables, arrays, and functions.
- To debug and improve code for better reusability and scalability.

Course Title: Environmental Studies

- Know the importance of environmental studies and method so conservation of natural resources.

- Describe the structure and function of an ecosystem.
- Identity the values and conservation of bio-diversity.
- Explain the causes, effects and control measures of various types of pollutions.
- Select the appropriate methods for waste management.
- Get knowledge about various disaster management methods
- Recall social issues and legal provision.

Course Title: Programming in Python

- To learn how to install Python, Start the Python shell.
- To learn to perform basic calculations, print text on the screen and create lists, and perform simple control flow operations using if statements and for loops.
- To learn how to reuse code with functions.

Course Title: Relational Database Management System

- To analyze Data Base design methodology.
- Acquire knowledge in fundamentals of Data Base Management System.
- Be able to analyze the difference between traditional file system and DBMS.
- Able to handle with different Data Base languages.
- Draw various data models for Data Base and Write queries mathematically.

Course Title: Python Lab

- To understand why Python is a useful scripting language for developers.
- To learn how to read and write files in Python.
- To learn how to design and program Python applications.
- Design programs using Python object types.

Course Title: RDBMS Lab

- Design and implement a database schema for a given problem domain.
- Populate and query a database using SQL DDL/DML commands.
- Program in PL/SQL including stored procedures, stored functions, cursors, packages.
- Design and build a GUI application.

Course Title: Computer Architecture

- Students will understand the sequence and execution of microinstructions.
- Students will understand Input and output peripheral devices and their communication with the rest of the computer components.
- Students will understand the major components of a computer including CPU, Memory, I/O and storage.

Course Title: Introduction to Web Designing (HTML & CSS)

- The student will be able to define the principle of web page designing, define the basic in web design, visualize the basic concepts of HTML, recognize the element of HTML.
- Introduce the basic concepts of CSS.

Course Title: Value Education

- Inculcate the value system in their real life scenarios.
- Implement the role of culture and civilization, roles and responsibilities in the society.
- Effectively follow Salient values for life such as forgiveness, ability to sacrifice, self esteem, teamwork and creative thinking.
- Reflect the human rights, social values and welfare of the citizen.
- Consider the relation between values and personal behavior affecting the achievement of sustainable future.
- Bind man and nature to preserve the environment.
- Overcome and try to evacuate social evils from the society.

Course Title: Operating Systems

- Understand the difference between different types of modern operating systems, virtual machines and their structure of implementation and applications.
- Understand the difference between process & thread, issues of scheduling of user level processes/ thread and their issues & use of locks, semaphores, monitors for synchronizing multi programming with multithreaded systems and implement them in multi-threaded programs.
- Gain knowledge about the concepts of dead lock in operating systems and how they can be managed/ avoided and implement them in multi programming system.
- Demonstrate the design and management concepts along with issues and challenges of main memory, virtual memory and file system.

- Understand the types of I/O management, disks scheduling, protection and security problems faced by operating system and how to minimize these problems.

Course Title: R Programming Lab

- This course gives practical exposure to the basics of R - Programming
- To provide an overview of a new language R used for data science.
- To introduce students to the R programming environment and related eco-system and thus provide them with an in demand skill-set, in both the research and business environments
- To introduce the extended R ecosystem of libraries and packages
- To demonstrate usage of as standard Programming Language.
- To familiarize students with how various statistics like mean median etc. can be collected for data exploration in R
- To enable students to use R

Course Title: Data Communication and Networking

- To understand the fundamental concepts of computer networking and provide the knowledge of different protocols at different layers of models.
- To understand the techniques used to share network bandwidth among the multiple users and provide the depth knowledge of DLL fundamentals.
- Learn how the data is transferred between the computers over the network.

Course Title: Mini Project

- Acquire knowledge about the software development stages such as analysis, design, coding, testing and maintaining the project.
- Students can able to design an effective software using various application.

Course Title: Elective – I: Visual Programming

- Design, create, build, and debug Visual Basic applications.
- Explore Visual Basic's Integrated Development Environment (IDE).
- Implement syntax rules in Visual Basic programs.
- Explain variables and data types used in program development.
- Apply arithmetic operations for displaying numeric output.

- Write and apply decision structures for determining different operations.
- Write and apply loop structures to perform repetitive tasks.
- Write and apply procedures, sub-procedures, and functions to create manageable code.
- Create one and two-dimensional arrays for sorting, calculating, and displaying of data.
- 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

- Create a file
- Access a file using the relative pathname
- Access a file using the absolute pathname
- Erase or delete a file
- Copy a file
- Move a file
- Cut columns of data from a file
- Paste / concatenate files
- Rename a file
- Create a directory
- Display the contents of a directory
- Display the user initialization files
- Change the working directory
- Return to the home directory
- Remove a directory

Course Title: Datamining

- Understand the functionality of the various data mining and data warehousing component
- Analyzing techniques of various data
- Understand different methodologies used in data mining and data ware housing.
- Compare different approaches of data ware housing and data mining with various technologies.

Course Title: Elective – II: IDE–Practical Introduction to Web Designing (HTML & CSS)

- Understand the principle of Web page designing
- Understand the basics in web design
- Visualize the basic concept of HTML
- Recognize the elements of HTML
- Understand the basic concepts of CSS.

Course Title: E-Commerce

- Understand the foundations and importance of E-commerce
- Analyzing branding and pricing strategies
- Determining the effectiveness of market research.

Course Title: Client/Server Computing

- Understand the basics and evolution of c/s computing
- Understand about the c/s applications and operating systems
- Learn the client hardware and software and GUI environment
- Understand about the types of servers and network managing environment
- Learn the platform independence transaction processing, testing and diagnostic
- Tools and backup & recovery mechanisms

Course Title: Elective – III: Cloud Computing

- Gain a clear understanding of the concepts that underlie distributed computing systems along with design and implementation issues.
- 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
- learn how to design and implement distributed algorithms

Course Title: Software Testing

- To learn the fundamentals and principles of software testing.
- To learn techniques of testing and models of testing
- To understand the significance of testing and data flow testing strategies
- To learn the essentials of metrics and test cases

Course Title: Distributed Computing

- To understand the concept of distributed database, security, distributed processing
- To learn the concepts of hardware, network operating systems, distributed systems and Their design issues
- To understand the communications in distributed systems
- To learn about the synchronization in distributed systems and thread implementations
- To gain knowledge about distributed file systems

22. M.A Economics Programme Specific Outcome:

- Application of monetary and fiscal policies to maintain stability in an economy.
- Finding solutions for Macro economic problems through micro foundations.
- Maintain strong and healthy fiscal federalism in India.
- Provide solutions for the problems in International trade such as BOP etc.
- Apply Keynesian and modern economist approach to solve the problems in internationally monetary system.
- Find out different ways by which improve the contribution of women in economic development.
- Provide different methods by which reduce the consumption of renewable and non-renewable energy resources:
- Improve the sustainable development by increasing the Green GDP.

M.A Economics Course Outcome:

Course Title: Macro Economics –I

- To demonstrate the knowledge on how the money is being circulated in an economy.
- Able to measure the cost of living by using CPI & WPI
- They will be able to calculate GDP by using different methods and able to estimate each and every method properly.
- Able to apply all the theory of consumption function.
- Able to analysis the credit a new consumption theory.
- Able to apply and analyze all investment function theories in the real economic situation.
- To analyse And Evaluate the concepts of multiplier and Accelerator to improve the growth rate of an economy

- To differentiate how the income and employment generation differ from classical school to modern school of economics.
- To analyse wage price flexibility theories and apply in the real economic situation to find out solution for economic instability.
- 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

- To demonstrate the role of public enterprises in India and analyse different pricing policies followed in public enterprises.
- To evaluate the Pareto Optimality, market failure and theory of second best.
- Differentiate public goods, private goods and analyse different theories of taxation.
- Examine the practical problems of deficit financing and giving solutions for burden of public debt.
- To analyse different theories of Budget and find out the applicability of balanced budget and Zero- based budget.

Course Title: International Economics-1

- To analyse the different international trade theories.
- To Demonstrate different concepts in terms of trade.
- To evaluate the technical progress in international trade.
- To analyse different forms of Government intervention in international trade and development.
- To critically analyse the role of FDI in economic development.
- To demonstrate the foreign exchange market and different types of exchange rate.

Course Title: Economics of Development

- To analyse kuznet's invented U- hypothesis and welfare of Index .
- To critically analyse population growth and economic development.
- To demonstrate the role of education and health in economic development.
- To analyse the role of agriculture and rural development in macro economic stability.
- Evaluate different development planning and apply the fiscal and monetary policy. To maintain stability in an economy

Course Title: Health Economics

- To analyse the equity and efficiency issues in demand and supply of health care
- To differentiate various types of health production functions.
- To analyse different health care incentives and financing for it.
- To measure and valuing health utility instruments and their development.
- To analyse health care system in India and give solutions to some problems.

Course Title: Macro Economics-II

- To analyse the usage of IS-LM in determining equilibrium of an economy and evaluate the applicability of IS-LM in international trade
- To demonstrate the evil effects of inflation and provide solutions for the problems of inflation through proper implementation of monetary and fiscal policies.
- Critically analyse the theories of business cycle and finding solution to recover the economy from different phases of trade cycle
- 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.
- 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

- To evaluate demand revealing schemes of public goods find out applicability of Keynesian case for stabilization.
- To critically analyse Wiseman-Peacock hypothesis and reforms in public expenditure policy.
- To demonstrate the equity and efficiency issues in fiscal federation.
- To analyse the problems in Indian fiscal federation and different tax policies of center and state.
- To brief stability in an economy how to apply fiscal and monetary issues

Course Title: International Economics-II

- To demonstrate the developments in International monetary system.
- To analyze the problems of disequilibrium in BOP and finding solutions to correct disequilibrium in BOP.
- Critically analyse the international problems of Asian region and European Union.

- To demonstrate the function of WTO, IMF and World Bank and Asian Development Bank.
- To evaluate different theories of trade.

Course Title: Monetary Economics

- To demonstrate the role of money in Keynesian and Post-Keynesian approach
- To analyze the demand for money in Keynesian and Post-Keynesian
- To distinguish between Classical and New Tobin's views on interest and monetary policy.
- To evaluate monetary system in India.
- To analyse International monetary system.

Course Title: Financial Economics

- To demonstrate the function of money market.
- To analyze Indian Capital market.
- To examine the stock market system in India and analyze the guide lines of SEBI.
- To demonstrate Indian derivative market and its regulations.
- To analyse functions and various financial market.

Course Title: Gender Economics

- To demonstrate the significance of women studies in socio-Economic development.
- To analyse the different theories of women expenditure.
- To demonstrate the role of UNO and World Bank in women's development.
- To analyse the contribution of women in economic development
- To demonstrate the progress and programmes of women entrepreneurs.
- To analyse the problems of women and provide solutions to empower them.

Course Title: Micro economics -I

- To evaluate modern utility demand theories.
- Critically analyse Cobb-Douglas production function and apply it in finding returns to scale.
- Examine different traditional and modern theories of costs.
- Critically analyse the equilibrium of perfect competition and monopoly market structures.
- To Demonstrate and analyse monopolistic and oligopoly market structures.

Course Title: Indian Economic Development and Policy-I

- To analyse economic development environmental degradation in India.
- Differentiate centralized and decentralized planning .
- To analyse different Indian plan models such as Mohalanobis, input and output and multi- sectoral models.
- To measure National income and GDP by different methods.
- To provide solutions to reduce poverty and unemployment in Indian economy.
- To analyse different Indian trade policies.

Course Title: Research Methodology

- To demonstrate nature and scope of social research.
- To identify the research problem and to formulate research hypotheses and research design .
- To analyse different techniques of data collection.
- To analyse data by applying different techniques.
- To demonstrate research presentation with diagrams and references.

Course Title: Energy Economics

- To analyse different energy resources and their role in Economic development.
- To examine and compare the intensity and elasticity of energy in National and International level.
- Critically analyse the problem of energy crisis and environmental degradation.
- To apply different methods of energy conservation and energy management to promote sustainable development.
- To analyse India's energy profile and find solutions to the energy crises.

Course Title: Mathematics for Economists -I

- To apply set theory in economics.
- To demonstrate the applicability of straight line, parabola and rectangular hyperbola.
- To differentiate convex and concave functions, logarithmic and exponential functions.
- To apply different techniques of differentiation.
- To demonstrate the applicability of potential derivations-maxima and minima.

Course Title: Micro Economics-II

- To analyse different modern theories of firm.
- Critically analyse different distribution theories such as Ricardo, Carl Marx, Kaldor, marginal productivity theory etc,
- To examine economics of information and finding solutions for asymmetric information.
- To evaluate two sector model of general equilibrium theory.
- To analyse Kaldor-Hicks-Compensation criterion and Bengon Criterion.

Course Title: Indian Economic Development Policy -II

- To analyse agricultural price policy, agricultural credit, food security and PDS.
- Examine the Industrial growth at National and State Level.
- To evaluate agricultural growth at National and State Level
- To analyse all human development indicators in India.
- To demonstrate the role of infrastructure in economic development.
- To analyse Indian fiscal federation and give solution for development .

Course Title: Statistics for Economists-I

- To apply probability theory in economics.
- To demonstrate the applicability of Binomial, Poison and Normal distribution in research.
- To analyse the different types of sampling techniques.
- To demonstrate hypothesis testing such as Null and alternative hypothesis and Type I and Type II error.
- To apply F test, T test and ANOVA to find out the significance of different variables in research.

Course Title: Mathematics for Economists-II

- To analyse Lagrange multiplier method in utility, cost and profit maximization.
- To apply Matrics in economics.
- To demonstrate and apply Input-Output analysis.
- To analyse Linear Programming methods.
- Differentiate Indefinite integrals and definite integrals.

Course Title: Environmental Economics

- To analyse the market failure and externality and Pareto optimality.
- To demonstrate natural resources exploitation and finding solution for it.
- Distinguish environmental cost of economic growth and sustainable development.
- To apply cost benefit analysis to reduce environmental degradation.
- To analyse different pollution control measures.

23. M.A Defence and Strategic Studies Programme Specific Outcome:

- Define the basic concepts of National security and Strategic aspects and different dimensions and approaches to National security.
- Explain the constitutional framework of various states and Analyse the current socio, political, economic and military situation of the state under varying competitive conditions
- 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
- Demonstrate critical thinking skills to analyse and evaluate the way in which National Security Strategists examine the real world scenario for the purposeful resolution.
- Classify various theories of international relations and their application in contemporary scenario
- Familiarize the student to read, write and speak with confidence on different aspects affecting national security and offer solutions
- Make the students socially responsible and adopt ethical standards or practice and develop the feeling of patriotism and nationalism
- Assess and evaluate the working process of the government on National Security affairs in terms of Policy Formulation/Policy Making
- 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.

M.A Defence and Strategic Studies Course Outcome:

Course Title: Indian Art of Warfare upto 1857

- Outline the evolutionary trends in the art of warfare in India- through vedic, puranic and epics sources. Identify its features like military organisations, weapons and forms of warfare.
- Explain main features of Hindu military system through the study of Mauriyan, Gupta and Harsha empires. Assess the progressive changes in the Art of warfare during that period.
- Evaluate the Arab & Turkish invasions of India- Identify the reasons for their successful invasions; compare it with the Rajput chivalry to outline their feature of their war strategies.
- Assess the Mughal military system to evaluate their success in India. Explain the features of Maratha military system- its significance. Analyse the Sikh pattern of warfare.
- To assess the Sikh warfare as compared to the English- through Battle of Sobraon. Outline the progressive Indianisation of Indian Army. Predict the Political Significance of the 1857 Sepoy Mutiny

Course Title: World Military History upto World War II

- Demonstrate systematic understanding of Ancient Greek warfare; Greco-Persian Warfare. Explain ancient warfare features through select case studies- Battle of Marathon, Thermophylae Salamis, isus, Arbela.
- Analyse the Roman Art of Warfare and identify the strategy and tactics through the battles of Cannae& Zama and war features of Julius Ceasar Campaigns
- Outline the innovations and inventions in the Art of Warfare as witnessed through the reforms of Adolphus , French Revolution and Nepoleonic wars
- Explain the causes, course and outcome of World War I; Demonstrate clear understanding of the role of Army, Navy and Airforce in the World War I
- Explain the courses, causes and outcome of World War II. Assess the features of Total War; explain the nature of Airpower & Sea power

Course Title: International Relations

- Explain the concepts, nature and scope and development of international relations. Outline the various theories of I.R for better analysis

- Demonstrate the importance of national interest – identify its various types; assess and evaluate the role of National interest in making of foreign policy and defence policy
- Identify features of State, Nation & Nation-State. Evaluate issues of Pluralism, multi-culturalism and ethnicity in nation-building process in contemporary period.
- Outline the origin, structure & functions of the UNO. Evaluate its contribution to world amity and development
- Assess the usefulness of various practices like- Collective Security, Balance of power; Arms Control & Disarmament towards avoidance of War

Course Title: India's National Security and Strategic Spectrum

- Evaluate the significance of nation-hood and nationalism through the study of India's freedom struggle; and, also to explain the features of pluralism and its consequent strength and weaknesses.
- Identify the national security objectives of India and evaluate its national security objectives in the changing contemporary strategic environment- identify its varied dimensions.
- Apply the internal security features to India's domestic situation to identify its nature as compared to trans-national security issues and problems.
- Evaluate the national security features of India's North East, Jammu and Kashmir, Punjab; assess extremist movements and outline successful counter measures to protect its National Security.
- Analyse the significance of technology power as "Force Multiplier" – in Indian Military Context. outline methodology for conflict resolution and conflict transformations in India.

Course Title: Conflict and Cooperation in South Asia

- Assess the geopolitical settings in South Asia and discuss Socio-Cultural and economic structure of South Asia and its impact on the regional strategic scenario.
- Identify power rivalries in South Asia; Analyse Strategic importance of Afghanistan, Myanmar and china for South Asian security spectrum.
- Discuss internal problems and conflicts in South Asia and identify the role of pressure groups with respect to religion, language, culture, tribe and the role of civil society.
- Analyse the prospects of Sub-regional cooperation in south Asia and particularly regional cooperation of South Asia under the aegis of SAARC

- Compare the issues and challenges among South Asian states and identify peace initiatives and movements in South Asian Region

Course Title: Theoretical Aspects of International Relations

- Demonstrate the significance of International Relations discipline- compare it with other social sciences- identify the levels of analysis of International Relations Subject
- Analyse the features of various theories of International Relations and Assess their prospects as an approach to the study of International Relations and critique its functions
- Compare other theoretical schools of International Relations – the English and the oriental (Indian and Chinese) and apply it in the study of International Relations and evaluate their significance.
- Demonstrate the utility of post-modern theories in the study of International Relations; assess their significance in designing the approach for the study of International Relations
- Explain the contextual relevance of various I.R theories Viz., post-colonial; subaltern; developing states and globalisation.

Course Title: International Law

- Explain the definitions and historical development of international law. Outline the nature, sources and codification of international law. Identify the distinction between internal law and domestic law
- Discuss the laws of land, sea and air warfare. Explain the nature of war crimes and genocide
- Explain the laws of neutrality and its manifestations- Assess the feature of rights of angary; contraband and the doctrine of continuous voyage
- Evaluate the role of international law in settlement of international disputes. Assess the legal character of war and outline the features of enemy character.
- Explain the legal mechanism like Blockade, prize court etc. Analyse the structure, role and functioning of International Court of Justice

Course Title: Arms Control and Disarmament

- Explain the rationale for armaments and its usage in inter-state relations. Evaluate the destructive and unproductive nature of war.

- Outline the various means adopted to mitigate the horrors of war. Evaluate the prospects of Arms Control and Disarmament leading to Universal Peace
- Evaluate the efforts towards the elimination of weapons of war in historical perspective. Identify the reasons for their failure in elimination of weapons
- Compile the efforts taken to save humanity from nuclear holocaust. Assess the global efforts towards elimination of nuclear weapons
- Outline the progressive efforts towards elimination of weapons. Evaluate the socio-economic benefits of Arms Control and Disarmament.

Course Title: Strategic Thought

- Discuss and explain various philosophies of statecraft- Kautilya, Gandhi and Nehru
- Analyse Jomini's view on war and the importance of Mass Army, Strategy, Tactics and logistics. Discuss strategic concepts of Clausewitz on war, strategy and logistics etc
- Explain Karl Marx's view of social revolution. Evaluate the thoughts of Dupicq and Foch on war ethics
- Outline the British concept of warfare and demonstrate clear ideas on A.T Mahan's Sea Power theory and the theories of air warfare of Douhet, Mitchel & Seversky
- Identify and explain Mao & Che Guevara's concept of Guerilla warfare and their prospects

Course Title: Geo-Politics and Military Geography

- Explain the definition, role and significance of Geo-politics. Identify the geographical components of National Power
- Demonstrate clear understanding of the thoughts of Haushofer, Mackinder and A.T.Mahan. Identify their strategic significance
- Evaluate the role and functioning of Global Positioning System, Geographic Information System and Remote Sensing in military perspective
- Explain the significance of India's geo-strategic location, Size, resources. assess the strategic importance of India's island territories – Andaman & Nicobar and Lakshadweep island
- Evaluate the strategic significance of India's land borders and maritime borders. Assess the prospects of territorial waters and Exclusive Economic Zone.

Course Title: Area Studies- India and SAARC

- Explain the strategic significance of south Asia demonstrate the clear understandings on the political composition of south Asia and prospects of regional cooperation
- Assess the strategic importance of Pakistan and Bangladesh in terms of its strategic locations government and politics. Identify the role of external power and their impact on India's strategic environment
- Assess the strategic location of Sri Lanka and Maldives in terms of its location, government and politics and discuss the role of external power and their impact on India's security
- Assess the geopolitical settings of Afghanistan, Nepal and Bhutan. Identify the role of external power and their impact on India's national security
- Outline the aim, objective, scope and functions of SAARC evaluate the prospects of establishing a regional security community

Course Title: Peace and Conflict Studies

- To explain the fundamentals of peace and conflict studies along with its conceptual understanding
- To analyse the mechanism of conflict management in regional context and assess Gandhian approach of conflict resolution. Evaluate its relevance to contemporary period.
- To study the causes of war and to assess its impact on regional conflicts and the role of United Nations.
- To discuss various aspects of the confidence and security building measures like peace building, peacemaking, peace keeping, and peace enforcement.
- To evaluate outcomes of the pacific and coercive settlement of disputes including peace research and peace movements. To evaluate the consequences of conflict resolution. Assess the role of IGOs, NGOs in the conflict resolution process.

Course Title: Defence Economics and Defence Management

- Outline the concepts of war and war economics; explain the features of economic warfare. Assess the symbiotic relationship of war and economy; and, critique the cost of war.
- Discuss the defence production in India; demonstrate the features of defence planning and war financing. Analyse the impact of defence budget and national security.

- Evaluate the defence budget of India, Pakistan and China. outline the new international economic order. Compare the features of administration and management outlining their principles and processes.
- Discuss the features of planning and its process. Identify the steps in planning function. Explain the features of MBO and decision making tool. Assess the various organizational structures and their functions.
- Explain staffing as a functions of management and its importance. Outline the process of manpower recruitment in military and paramilitary in India. Discuss the function of directing and controlling and aspects of leadership qualities.

Course Title: Science, Technology and National Security

- Discuss the relevance of science and technology in national security affairs. Outline the usage of technology in military, nonmilitary and in both sections.
- Evaluate the impact of IC engines, electricity, radar and radio and their scope and functions in warfare.
- Discuss the significance of military research in areas of energy, atomic sciences, oceanography and electronics. Evaluate their contributions to the functions of warfare
- Demonstrate the impact of information technology; biotechnology; artificial intelligence and stealth technology in warfare.
- Outline and evaluate the S&T base and its expansion in India. Assess its contribution towards India's self-reliance in national security.

Course Title: Defence Journalism

- Explain the meaning of journalism and discuss the structure and functions of news-sector. Outline the types and characteristics of media and their scope.
- Apply the role of news media to defence sector identify the various kinds of defence news sources. Outline the theories of news selection.
- Demonstrate the process of defence reporting; outline its procedures in reporting –format, language sources, graphics, animation, and interviewing skills and their importance.
- Outline the procedure of editing; proof reading, caption making and picture editing and their importance
- Evaluate the role of media laws and ethics. Assess the hurdles in defence writing.

Course Title: Wars in Contemporary Period

- Discuss the meaning and scope of limited wars apply its features to the Korean wars (case study); outline its causes, course and outcome. Evaluate the role of UN in Korean crisis
- Outline the features of Vietnam war; assess its unique features to explain the outcome of the war.
- Demonstrate clear understanding of the Arab Israel wars. Explain the main events and assess the role of air power in the war. Evaluate the results of the war
- Explain the causes, course and outcome of the Iran & Iraq war. Discuss the features of the war and evaluate the outcome of the war
- Outline the causes, course and outcome of the Gulf wars I & II. Identify the unique nature of the war. Explain the role of UN.

Course Title: Post Independent wars of India

- Discuss the partition of British Indian army. Outline the process of state building in India – Through annexation of Junagadh, Hyderabad police action and the takeover of goa and their challenges.
- Outline the course of events leading to 1947-48 Indo- Pak wars. Discuss the military operations of Indian army and the military lessons learnt.
- Discuss the causes course and main events of 1962 Sino-Indian war. Assess the outcome of war through its main events and its impact on India's military reforms.
- Outline the common course and the outcome of the 1965 & 1971 Indo-pak wars demonstrate the clear understandings of the role of artillery, navy, and air power in these wars.
- Evaluate the challenges to India's territorial integrity with the type studies of operation blue star, operation rhino and operation Vijay. Assess the prospects of territorial integrity of Indian republic.

Course Title: Fundamentals of Industrial Security:

- Explain the definition, meaning, scope of industrial security. Analyse various types of industries and their specific needs.
- Explain the means and concepts in security awareness. Outline the relevance and scope of cyber security and forensic sciences.

- Demonstrate the role and functions of private security service- preventive security, protective security, deductive security, and punitive security services.
- Identify the various types of security fences and their standards and their security planning process
- Evaluate the security parameters of industries and assess their roles and functions towards their goals

Course Title: Specialized Warfare

- Explain the definition, nature and types of propaganda demonstrate the functions of brain washing and rumors. Assess these techniques of psychological wars and its impact.
- Assess the characteristics and objectives of biological and chemical warfare. Identify the various types of agents and its effects
- Discuss the concept, objectives and causes of guerilla war. Outline its characteristics. Assess the functions of insurgencies and counter insurgencies
- Outline the concept origin and features of nuclear warfare. Discuss the development of nuclear weapons and also, explain the various effects of nuclear explosions.
- Explain the definition and causes of terrorism. Outline various types and techniques of terrorism. Assess the nature of terrorism and predict its future trends

Course Title: Research Methodology and Dissertation

- Assess the Concerns of Social Science Research- Qualitative and Quantitative inquiries., Ontology and Epistemology and basic theories and their roles
- Demonstrate literature review, to prepare statement of Research Problem and the need for Research objectives or aims, analyse why Research Questions?. frame Research Hypothesis, Select a Research Methodology- choice of an appropriate research design (experimental and non-experimental) and assess the scope of the Study/Significance of the Study/Limitations of the Study
- Explain the Qualitative Research Design, various Dimensions of Qualitative Research and the Qualitative Procedure. Prepare Qualitative Data through observations, interviews, focus group discussions etc. Apply Quantitative Methods by Survey Research
- Collect samples through different techniques like Probability and Non-Probability, Probability: Simple Random, Stratified Random, Systematic Random, Multistage Cluster ,Non-Probability: Judgement/Purposive, Convenience, quota, snowball

- Evaluate multiple Data processing and Data Analysis procedures and the reporting process.

24. M.S.W (Social Work) Programme Specific Outcome:

- 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
- To help students develop knowledge, skills, attitudes and values appropriate to the practices of social work profession.
- To enable students develop creative thinking and ability to apply theoretical knowledge in practice of social work.
- To facilitate interdisciplinary approach for better understanding of social problems, situations and issues of development.

M.S.W (Social Work) Course Outcome:

Course Title: Social Work Profession

- Demonstrate professional social work values, principles and ethics at their workplace effectively.
- Create customized social work tools and techniques and plan effectively addressing social issues.
- Identify themselves with Professional Social Work forums at Regional, National and International levels.
- Analyze the social situation clearly and assert the rights for each individual in society.
- Will practice Rights based Approach in all the Social Work interventions.

Course Title: Social Work with Individuals

- Apply case Work Values and Principles while working with Individuals.
- Identify the Client's Problems and provide appropriate solutions.
- Equip the skills relevant for Social Case Work.
- Plan the Case Work Process.
- Formulate appropriate intervention techniques.
- Use effective communication techniques to identify the issues of the client.

- Identify various settings and practice based on the social contexts of the country.
- Predict the social contexts effectively and apply social case work techniques.

Course Title: Social Work with Groups

- Will use values and principles of group work at their workplace.
- Compile the group work session reports effectively.
- Utilize the individual resources/strengths of the group members and design the intervention process effectively.
- Apply basic ideas, tools and techniques in solving group issues and bringing development to the group.
- Constantly evaluate the groups sessions to conduct the group work process effectively.
- Plan and design each group work session based on the different social work setting.

Course Title: Sociology

- Constantly analyze the institutions and their influence on individuals in the society.
- Design strategies to address social issues in a scientific organized manner.
- Critically analyze policies and schemes among the poor.
- Compare and understand issues with reference to current global trend in terms of Liberalization, Globalization and Privatization.

Course Title: Psychology

- Use the basics of Psychology while practicing Social Work.
- Effectively identify the Psychology functions in human.
- Evaluate the different problems at different stages of life effectively.
- Assess the client using various personality theories
- Identifying the concept of Mental Health and various Mental Disorders.
- Analyze abnormal behavior of the clients effectively.
- Apply stress Management Technique

Course Title: Social Work with Communities and Social Action

- Apply knowledge of concepts needed to work with communities.
- Demonstrate community organization skills while addressing local and regional issues.
- Apply various models of community organization to bring social change.

- Use various social action techniques and strategies while addressing social.
- Critically analyze social problems and design appropriate strategies to address social issues.

Course Title: Social Work Research and Statistics

- Analyse social issues using scientific knowledge and methods both empirically and conceptually.
- Use participatory research methodology effectively while initiating new development projects.
- Will formulate and do many action research to address social issues.
- Apply research skills while working with civil societies, government and international organizations.
- Create new research tools effectively.

Course Title: Social Welfare Administration

- Demonstrate good administrative skills at workplace and in society.
- Create and administer social welfare organizations especially non-governmental organizations effectively.
- Demonstrate good financial administration skills at workplace and in society.
- Compute the financial administration system in an organization.
- Plan strategies for Co-ordination and co-operation between voluntary and government welfare agencies.

Course Title: Social Policy and Social Legislation

- Will use knowledge of social legislations and policies while working with the grassroots and subaltern communities.
- Scientifically analyze the policies and legislation of the state.
- Will demonstrate good citizenship values propagated by the state in their families and workplace especially on the development of women and subaltern communities.
- Apply values and ethics in all the development projects that they work.
- Will evaluate social issues and use constitutional remedies for protection of Human Rights in India.

Course Title: Gender and Development

- Understand the concept of gender, development and how the two concepts combine to reflect economic development in a society. Study various gender analysis frameworks to track development of developmental thought in the field of gender.
- Correlation between levels of education and trends of development in various gender groups. Affect of gender relations, social systems and education levels on employment opportunities and progress
- Health issues affecting women and its impact on developmental levels. Role of NGOs and Government policies to help accessibility to health services.
- Position of women in a society during difficult circumstances like social disaster, displacement, trafficking, harassment etc. Legal provisions available under the Indian Constitution and state led schemes
- National and international bodies with focus on women's development. Past schemes and future aspirations for women's development including reservation for women and elimination of gender-based discrimination

Course Title: Rural Community Development (CD)

- Assess internal and external resources of the communities.
- Apply ideological perspective while working with communities.
- Design and work on poverty eradication programs with international accepted scales.
- Critically analyze political structure in the rural areas.
- Use participatory tools (PRA) to do social research among rural communities.

Course Title: Labor Legislation (HRM)

- Apply labor legislations at International, National and Regional levels.
- Use appropriate skills for practicing labor law at factory, shops and establishments and the information technology sector.
- Demonstrate suitable attitudes for the practice of labor laws at national and regional levels.
- Evaluate Labour standards at workplace effectively.
- Constantly compare the Labour standards at regional and global level.

Course Title: Mental Health and Psychiatric Disorders (MPSW)

- To apply the phenomenology, symptomology and treatment of common mental disorders.
- Evaluate the client using various mental health assessment tools and taking Case History
- Effectively identify Mental Disorders and overview of classification of Mental Disorders
- Compare the various classification of mental disorders.
- Use legislation appropriate to Mental Health related issues.

Course Title: Development and Social Work Practice (CD)

- Critically analyze the Indian economy and various issues related to development economics
- Predict the role of agriculture and industries in the development of our country.
- Design appropriate programs to address the sustainable development goals of the United Nations in India.
- Apply scientific strategy for food security among the poor.
- Emphasize and recognize the role of women in the rural and urban economy.
- Compare global and regional development standards constantly.

Course Title: Human Resource Management (HRM)

- Compare the different functional areas of HRM & HRD.
- Demonstrate effective managerial skills.
- Will predict emerging trends in the field of HR.
- Will design organizational policies and human resource planning.
- Constantly assess changes and challenges happening in the global human resource management.

Course Title: Public Health in India (MPSW)

- Apply multidimensional approach to Health.
- Plan appropriate Preventive, Primitive and Rehabilitative health care program.
- Compare the administration of various health care systems in country.
- Utilize the National Health Programmed and Health Policies while working among communities..
- Formulate health care programs with Human Rights perspective

Course Title: Working with Children and Youth (CD)

- Effectively assess the problems of children in Urban and Rural Communities.
- Plan appropriate programs and strategies to address the social problems of the youth and children in Indian society.
- Effectively assess the need, plan projects, evaluate national and international projects for the development of children.
- Use appropriate strategies while working for the children under difficult circumstances like children affected by natural disaster, displacement and in conflict affected zones, etc.
- Identify the factors leading to alcoholism and substance intake and plan appropriate programs to address it.
- Formulate best programs involving in planning programs with NGOs, Civil Societies and the Government for the deprived children and youth.
- 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)

- Use knowledge on the industrial relation system in India.
- Apply Industrial Relations techniques in trade union.
- To formulate effective programs for the welfare of the staff working in organized and unorganized sector
- Evaluate the implementation of social security systems at the workplace for the welfare of the staff.
- Create appropriate grievance redressal systems for the welfare of the staff.

Course Title: Medical Social Work (MPSW)

- Demonstrate ethical Medical Social Work practice.
- Create appropriate systems to for the effective administration of Medical Social Work practice.
- Apply all the methods of social work in hospital setting.
- Constantly evaluate the need of the health programs among urban and rural poor.
- Formulate community based rehabilitation strategies while working with disability.

Course Title: Counselling

- Apply Counseling skills at different settings.
- Use various Counseling skills required and Counseling process.
- Design Counseling techniques based on the social background of the client.
- Using Counseling as a tool for managing changes and situations.
- Demonstrate ethics in counseling.

Course Title: Social Entrepreneurship (CD and MPSW)

- Mobilize the community to utilize the projects and schemes of development banks such as NABARD, DICS, SSCS etc.
- Training youth and women entrepreneurs in effective marketing skills.
- Training women and young entrepreneurs in EDP skills.
- Design projects for rural communities in incubating new social enterprise to address social issues in the communities.
- 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)

- Design appropriate quality management systems comparing various international standards.
- Use latest quality function deployment techniques for the benefit of the management.
- Demonstrate leadership qualities and ethics at workplace.
- Formulate effective quality control tools like check sheet, pareto chart, affinity diagram.
- Communicate effectively the quality management systems to the staff.

Course Title: Urban Community Development (CD)

- Design action research to constantly understand of the issues of the slum dwellers and pavement dwellers.
- Plan appropriate program for the development of communities living in urban slums.
- Create awareness among community to utilize the state and central government projects for the welfare of Urban Poor. Eg. CMDA, IAY etc.
- Demonstrate leadership skills and become agents of social change among the slum dwellers.
- Design perfect strategies and programs for the developement of the urban poor.

Course Title: Organizational Behaviour (HRM)

- Compare the dynamics of organizational behavior at international, national and regional levels and adopt relevant systems.
- Constantly analyze the characteristics influencing human behavior in organizations.
- Assess micro and meso perspective of staff team in an organization.
- Design appropriate exercises for stress management and teamwork.
- Apply techniques and tools for motivation among staff for the better productivity.

Course Title: Psychiatric Social Work (MPSW)

- Compare international Psychiatric Social Work standards and adopt suitable standards.
- Apply methods of social work among psychiatric patient, family and people with mental illness.
- Create the Mental Hospital as a social system.
- Demonstrate high knowledge and skill as Psychiatric Social Worker.
- Formulate and design community mental health programs to address issues of mental health among community.

Course Title: Dalit and Tribal Development (CD)

- Identify needs and issues Dalits and Tribal communities in South Asian region.
- 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
- Apply strategies for resilience of the Dalit and Tribal community from economic and social vulnerabilities using constitutional backup.
- Effectively plan micro and macro projects for the development of the Dalit and Tribal communities.
- 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)

- Design strategies and guidelines for development of the organization.
- Revise organization policies adopting international standards.
- Analyze group process approaches and use appropriate strategies for conflict management.

- Plan appropriate strategies to address organizational issues effectively instead of avoiding them.
- Evaluate organization systems from time to time and restructure the organization.

Course Title: Therapeutic Interventions in Social Work Practice (MPSW)

- Use appropriate techniques for Therapeutic intervention in Social Work.
- Identify the role of social worker in clinical practice and help accordingly.
- Apply indigenous therapeutic techniques.
- Plan appropriate programs for the treatment of HIV/AIDS, de addiction, diabetics, coronary heart disease.
- Predict current trends in healing practice adopt at workplace.
- Apply Transactional Analysis Therapeutic intervention.

Course Title: Management of Non-Governmental Organisations

- Demonstrate the skill required to start and manage an organisation
- Create appropriate strategies for project planning
- Analyse and execute best management process for effective and efficient functioning of NGO
- Evaluate the current issues' in development organisation
- Using Indigenous method in developing an organisation

Course Title: Human Resource Development (HRM)

- Apply the concepts and functions of Human Resource Development at workplace.
- Formulate new policies and systems adopting emerging trends in the field of HRD.
- Demonstrate attitude and skills required for employment in the field of Human Resource Development
- Design tools to manage discipline, maintain work – life balance and how to handle Grievance in an organization.
- Use appropriate tools to evaluate the function of the staff.

Course Title: Hospital Administration (MPSW)

- Create appropriate systems for effective management of hospitals.

- Compiling the roles and responsibilities of the Governing Board, Executive Board, Advisory Board, Nursing Staff and other staff.
- Use IT as a tool to maintain records and systems in hospital administration.
- Compare and evaluate the current issues in health care services.
- Identify various dimensions of health.

Course Title: Corporate Governance and Corporate Social Responsibility

(CD, MPSW and HRM)

- Constantly evaluate the company based on the Triple Bottom Line Approach .
- Demonstrate and advocate for ethical business and corporate social responsibility.
- Compare international standards in business establishments and evolve policies and systems at workplace.
- Design gender sensitive systems in Business Environment.

Create CSR programs for the development of the communities around the factories and industries.

25. M.B.A Program Specific Outcomes:

- 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.
- This course makes the student ready to start and run their own venture in the most effective manner.
- They create employment opportunities and thereby they spur the economic growth of the country.

M.B.A Course Outcomes:

Course Title: Management Principle and Business Ethics

- To highlight the management evolution and connect how it will affect future managers
- To impart the role of planning in making business decisions
- To familiarise and practice the organizing function leading to efficiency
- To convey the fact that co-ordination is essential for survival and success
- To reach out the importance of behavioral code and moral values in business

Course Title: Statistics and Quantitative Methods in Business

- Explain the scope of statistics and discuss the methods in measures of central tendency and dispersion
- Introduction to basics of probability, Baye's theorem and probability distribution
- To demonstrate the hypothesis testing methods
- Discuss the correlation, regression and time series analysis
- To outline on decision-making under risk and uncertain situations

Course Title: Organisational Behaviour

- To make assessment of potential effects on organizational behaviour
- To develop a basic understanding of individual behavior and its issues
- To analyse the behavioural problems in team management and offer solutions
- To observe and evaluate the different leadership styles to adapt an appropriate one
- To apply organizational behaviour concepts, models and theories to real life management situations through case analysis

Course Title: Accounting For Managers

- To define the general purpose and functions of financial accounting
- To explain the concepts and procedures of financial reporting, including income statement, statement of retained earnings, balance sheet, and statement of cash flows
- The impact of alternative accounting methods on financial statements
- To examine the cost according to the level of business operations and schedule it to differentiate
- To analyse how marginal cost affects profitability

Course Title: Managerial Economics

- To understand the role of managers and fundamentals concepts that affects decision making
- To analyse the demand and supply conditions and make sales forecasting
- To explain the theories of production and figure out the different costs of production and how they affect short and long run decisions

- 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
- To demonstrate the key macroeconomic indicators affecting business such as fiscal policies, monetary policies etc

Course Title: Innovation and Entrepreneurship

- To demonstrate the skills of entrepreneurship, including opportunities
- To evaluate the opportunities for business in present environment
- To enumerate the importance of innovation and creativity in development and managing growth of business
- To prepare a comprehensive business plan for an original product or service that justifies potential profitability and sustainability of the business model
- To articulate their ideas on small business model in an organized and persuasive manner

Course Title: Language and communication skills

- Twinning functions of listening and speaking
- Twinning functions of Reading and writing
- Individual communication
- Intermediary communication
- Social communication

Course Title: Legal Aspects of Business

- To have an overview the basic rules of commercial law including breach of contract, the tort of negligence, liability for unsafe products, etc
- To explain an advanced understanding of the nature and relevance of sales law
- To demonstrate comprehensive and accurate knowledge and understanding of those areas of company law
- To develop competence in industrial disputes and application of the law
- To analyse and assess the need for consumer protection and outline the areas covered by consumer protection laws

Course Title: Applied Operations Research

- To outline the scope of Operations Research and demonstrate the Linear programming problem
- Gaining knowledge on Transportation and Assignment problems
- To analyse Networks and project scheduling
- Discuss the basics of queuing theory and sequencing
- Gaining knowledge on Game theory and Replacement policies

Course Title: Human Resource Management

- To provide a strong foundation on basic HRM knowledge and skills
- To enable implementation, and evaluation of employee recruitment, selection, and retention plans and processes
- To develop, implement, and evaluate employee orientation, training, and development programs
- Facilitate and communicate the human resources component of the organization's motivating plan
- To administer and contribute to the design and evaluation of the performance management program

Course Title: Marketing Management

- To identify core concepts of marketing and the role of marketing in business
- Ability to develop marketing strategies based on product, price, place and promotion objectives
- To evaluate the proper sales promotion method with suitable channel of distribution
- To examine the factors influencing buyer behavior
- To understand the role and importance of digital marketing

Course Title: Operations Management

- Introduction describe the boundaries of an operations system
- To recognise its interfaces with other functional areas within the organisation and with its external environment
- To manage manufacturing and service operations efficiently

- Provide a sound understanding of the key concepts relating to warehouse management in terms of both information and physical aspects of control
- To know the techniques of MRP, Inventory control, work study and time study

Course Title: Financial Management

- To understand both the theoretical and practical role of financial management in business corporations
- To apply financial management concepts and tools to the decisions faced by a manager in finance
- To evaluate on the various investment and dividend decisions
- To understand the different forms of long term financing
- Evaluate the comparative working capital management policies and their impact on the firm's profitability, liquidity, risk and operating flexibility

Course Title: Business Research Methods

- To discuss the significance and types of research
- To outline the types of research design, measurement and scaling techniques
- To demonstrate the methods of data collection
- To explain the data preparation and different data analysis techniques
- Preparation of report and ethics in research

Course Title: Spoken and Presentation Skills

- General Language Knowledge and Presentation
- Special Language Knowledge and Presentation
- General communication Skills for Presentation
- Professional communication Skills for Presentation
- Social communication Skills for Presentation

Course Title: Strategic Management

- Understand the role of strategy and its process
- Identify the forces impacting and designing corporate policy
- To demonstrate Environmental Analysis and Explain the importance of social, economic, political forces and technological factors

- Be critically aware of factors involved in strategy making
- Assess the resources and constraints for strategy making in a business context

Course Title: Management Information System

- To describe the role of information technology and information systems in business
- To have a broad understanding of database concepts and database management system software
- Apply Management Information Systems knowledge and skills learned to facilitate the acquisition, development, deployment, and management of information systems
- Effectively communicate strategic alternatives to facilitate decision-making through technology
- To demonstrate the ability to identify computer and network security threats

Course Title: Personality Development

- To understand the importance of personal grooming
- To evaluate their interpersonal skills
- To explain on attitude development
- To outline business presentation
- Discuss the approaches to a formal meeting

Course Title: Internship

- Integrate theory and practice.
- Assess interests and abilities in their field of study.
- Develop work habits and attitudes necessary for job success.
- Build a record of work experience.
- Acquire employment contacts leading directly to a full-time job following graduation from college.

Course Title: Human Resource Development

- Demonstrate the knowledge and skills needed to effectively manage human resources
- To understand the digitalization of HRM activities in an organisation
- To have clear idea to manage cross cultural team in work place

- To give an overview of developing career and competency
- To demonstrate a commitment to lifelong learning by participation in professional development activities through coaching and counseling

Course Title: Stress Management

- To identify the symptoms for stress and predict individual and work related stress
- To demonstrate time management and importance of prioritizing
- To explain crisis management
- To outline on work place humour and understand the role of group cohesion
- Discuss on self-development and effective decision-making

Course Title: Industrial Relations and Labour Welfare

- Analyse the importance of harmonious relationship in industries
- To examine of the role of the state and law in managing conflicts in workplace
- To provide useful practical knowledge for workplace safety which helps identification, evaluation, and control of hazards
- To provide a knowledge on the provisions of employee welfare in Indian context
- To understand the importance of labour laws and its usefulness

Course Title: Security Analysis and Portfolio Management

- To understand the basics of security analysis and its evaluation
- Basic introduction on fundamental and technical analysis
- To provide knowledge on objective, measures and evaluation of securities
- To create awareness on derivatives and mutual funds
- Gaining knowledge on portfolio analysis

Course Title: Corporate Finance

- To enumerate the role of finance in the development of industries
- Analyse the corporate financing decisions
- To evaluate the short term working capital management policies and their impact on the firm's profitability, liquidity, risk and operating flexibility
- To explain the concepts and procedures of financial reporting, including income statement, statement of retained earnings, balance sheet, and statement of cash flows
- To explain and analyse the interrelationship between finance and governance

Course Title: Merchant Banking & Financial Services

- To provide an overview of merchant banking activities in India
- To gain knowledge on the legal and regulatory framework, SEBI and stock exchanges operating in India
- To understand the issue management process
- Gaining knowledge on concepts like mergers, acquisitions, portfolio management services, leasing and hire purchases
- Basic understanding on the other fee and fund based financial services

Course Title: Consumer Behaviour

- To outline the significance of consumer behaviour and application of the knowledge in marketing decisions
- To examine the industrial and individual consumer behavior models
- Explain the role of internal influences on consumers
- To identify the external influences on consumer buying behaviour
- To demonstrate the purchase decision process

Course Title: Retail Marketing

- Basic introduction to retail marketing and global retailing
- To outline the different types of retail formats
- To provide knowledge on store layout and merchandising
- Gaining knowledge on retail marketing mix and visual merchandising
- Understanding consumer behaviour in retail buying process and evaluate the challenges in retailing

Course Title: Services Marketing

- Basic introduction to service sector and its characteristics
- Gaining knowledge on the 7ps of services marketing mix
- To provide effective management of services marketing through proper strategy
- To gain knowledge on service quality gaps and techniques to resolve it
- To provide an overview on services marketing in various sectors

Course Title: Persuasion Skills

- Discuss the importance of Negotiation skills
- To evaluate the interpersonal and persuading skills of the students
- To analyse the non-verbal communication, Kinesics exhibited by students
- To outline on Business Etiquettes
- Highlight on Personal Grooming and Interview Skills

Course Title: Project work & Viva-Voce

- Develop scientific approach in solving a research problem
- Identification of research problem
- Knowledge on collection and tabulation of data
- Using the right tools for the analysis of data
- Correct interpretation of data and effective decision making

26. M.Com Programme Specific Outcomes

- Impart the ethical values and norms required for facing the challenges of growing Trade and Industry.
- Expertise in handling tax filing systems, GST and required accounting standards for business environment.
- Equip themselves with required managerial and accounting skills to face the challenges of business in special circumstances.
- Empower themselves in the Research field with their acquired knowledge to meet the societal needs.
- Update the international business practices by obtaining skills pertaining to Innovation and Technology.
- Accomplish their ambition by the acquisition of necessary communicative Skills, Managerial skills and Marketing skills.
- Enable themselves in managing Costs, Revenue, Pricing and budgetary techniques for effective financial management of business.
- Construct a complete business profile as a professional or as an entrepreneur globally.

M.Com Course Outcomes:

Course Title: Advanced Corporate Accounting and Accounting Standards

- Justify the importance of the rules of Double entry system in issue of shares.
- Solve problems relating to valuation of goodwill and shares by using different methods.
- Explain the concept of alteration of Share Capital, Amalgamation, Absorption and Reconstruction
- Illustrate the accounting procedure with respect to Liquidation of Companies
- Discuss the various provisions relating to mandatory Accounting Standards
- Develop skills in the preparation of accounting statements and in their analysis.

Course Title: Financial Management

- Examine the role of financial management in investment and dividend decisions
- Assess the various costs related to Capital.
- Justify the financing decisions relating to capital structure.
- Analyse the significance and computation of leverages
- Apply the working capital management strategies and its determinants
- Develop the required skills in financial analysis and decision making

Course Title: Organisational Behaviour

- Examine the Various Organisational Behaviour models.
- Compare and contrast the Individual as well as Group Behaviour
- Evaluate the Transactional analysis on Quality of Work Life
- Examine the various dimensions of Conflicts Management.
- Create and maintain organizational culture and climate.
- Impart knowledge on organizational dynamics.

Course Title: Managerial Economics

- Analyse the approaches of Managerial economics for managerial decision making
- Forecast the business through Demand Analysis.
- Assess the cost as well as the capital investment analysis
- Inspect the market structure for pricing and output determination.
- Design Pricing objectives, methods and approaches
- Synthesize the expertise on the application of economic theories and concepts to business decisions

Course Title: Accounting for Specialised Institutions

- Examine the proceedings for preparation of Profit and Loss Account and Balance Sheet of Holding and Subsidiary Companies.
- Assess the different schedules of Banking Companies on loans and advances.
- Facilitate the students relating to generation of revenues and claims of General and Life Insurance Companies.
- Analyse the procedures on accounting system of Electricity and Non-Electrical companies
- Familiarize with different types of packages and containers in packaging and shipping company accounts.
- Categorize accounting practices of various specialized institutions and to update the knowledge of accounting standards

Course Title: Advanced Cost and Management Accounting

- Examine the essentials of costing system and its installation.
- Prioritize the assessment of process costing towards normal and abnormal losses and gains
- Design budgets and evaluate through effective budgetary control.
- Assess the preparation and interpretation of financial statement analysis
- Construct the cash flow and fund flow analysis.
- Develop the skills of students in preparation of cost and management accounting statements.

Course Title: Marketing of Services

- Analyze the nature and classification of services in marketing implications.
- Assess the marketing strategies for different service firms
- Examine the product support and pricing of services.
- Evaluate the Financial services and marketing of non-profit firms
- Design Customer Relationship Management and relationship marketing towards customer satisfaction
- Construct specialized knowledge on marketing skills and marketing practices of service sector.

Course Title: Advanced Business Statistics

- Assess the Times Series and Trend Analysis
- Prioritize the Index numbers and cost of living index
- Measure the usage of Probability distributions
- Compare and contrast Probability binomial and poisson distribution
- Analyse the different sampling techniques and distributions
- Construct expertise in statistics methods and applications for statistical analysis.

Course Title: Income Tax Law and Practice

- Examine the Income exempt from taxes, commutation of pension and provident funds
- Assess the income from house property and compute income from business or profession.
- Rate the capital gains and its computation under income from other sources
- Endorse to club their income and set-off of their losses with other heads of income
- Inspect the power and duties of Central Board of Direct Taxes and IT assessing officers.
- Construct the practical acquaintance on income tax provisions

Course Title: Knowledge Management

- Assess the Knowledge Management Strategies to analyse the benefit of knowledge economy
- Create knowledge architecture based on tacit and explicit knowledge
- Identify the knowledge culture enablers and tools for collaborative platforms
- Evaluate the Knowledge culture change and enhancement programs
- Plan the knowledge careers and organizational knowledge role classification
- Construct policies for managing human resources in organization inclusive of knowledge Management tools.

Course Title: Research Methodology

- Examine the Research Design of various types of research.
- Compare and contrast the different methods of data collection and its presentation
- Complete the analysis of Correlation and Regression to arrive inferences.
- Create the formulation of Hypothesis and testing of Hypothesis
- Construct the Research Reports based on the analysis.
- Analyse the research problems through systematic research methodology

Course Title: Fundamentals of Information Technology

- Justify the implications of information Technology in business.
- Categorize the Operating Systems and ICT Tools
- Assess the Hardware and Software requirements of Internet and Network Topologies
- Examine the extrapolations of word documents and Excel sheets.
- Create business reports in Ms-Access and design Presentation using comprehensive tools.
- Inspect the usage of computer applications in business.

Course Title: Accounting for Managers

- Compare and contrast the pricing decisions under special circumstances.
- Investigate into Differential costing in managerial decision making
- Assess the various Capital Investment Decisions
- Examine the Transfer pricing and performance measurement
- Compose the cost and management analysis on activity based
- Apply advanced managerial accounting concepts in order to make more effective decisions in simulated and actual business situations

Course Title: Indirect Taxes

- Analyse the Emphasis on contribution to Government revenues through taxation.
- Investigate into the levy and collection of Customs Duty.
- Highlight the implementation of Goods and Services Tax in India.
- Examine the Registration process and provisions in GST
- Inspect the challenges for the Government regarding the implementation of GST.
- Implement the practical exposure on filing of GST returns.

Course Title: Industrial Relations and Labour Welfare

- Investigate into industrial relations problems in Public Sector.
- Identify availability of Government Machinery to attain industrial peace to solve industrial disputes.
- Analyse the various labour welfare measures and funding schemes.
- Examine the safety and security measures taken to implement labour welfare
- Categorize the different types of labour and analyse their problems and solutions.
- Compose knowledge on managing industrial relations.

Course Title: Change Management

- Analyse the nature of Change Management and its impact
- Examine the progress and challenges in organizational Change Management.
- Equip to manage the complex major changes and resistance to change.
- Mapping up of cultural attributes to change and its resistance
- Investigate the different models for systems approach towards change management.
- Manage the business in the changing business environment.

Course Title: Advertisement and Salesmanship

- Discuss the components of marketing communications
- Equip with advertisement objectives, budgeting and identification of target advertisement
- Evaluation of Media mix and strategies
- Examine the role of salesmanship in direct selling
- Explain the International advertising strategy
- Enable the students to compete in the marketing environment through advertisement

Course Title: Project Plus Viva Voce

- Apply the Research Methodology into Projects
- Collection of Literature Review and identification of research gap
- Prioritize the nature of data and its collection
- Application of Statistical tools to infer the findings
- Prepare the Project reports
- Suggest the solutions for the tribulations of research study

Course Title: Computerized Accounting

- Introduces TALLY software and integrate with financial accounting
- Creation of Accounts and Inventory Masters
- Preparation of financial and inventory statements
- Position the voucher entries into real time business
- Construct the technology oriented modules for financial records.
- Manage the business transactions effectively and accurately

27. (M.Sc Chemistry) Programme Specific Outcome:

- Develop a broad learning in advances in chemistry that stresses scientific reasoning and analytical problem solving with a molecular perspective and develop the ability to communicate scientific information in written and oral formats
- Get exposures on broader experimentation in chemistry on applied aspect and also using modern instrumentation to understand the importance of the chemical transformation for high throughput applications.
- Investigate the interdisciplinary nature of chemistry in biology, medicine, materials science to excel in R&D for the benefit of societal needs.
- Learn the laboratory skills needed to design, and interpret chemical research; acquire a foundation of research in chemistry
- Develop the skills required to succeed in higher learning in chemistry, in the chemical industry and in academic profession.

(M.Sc Chemistry) Course Outcome:

Course Title: Stereochemistry and Reaction Mechanism

- To Identify the absolute configuration of molecules – D/L, R/S, erythro/threo, meso/dl, E-Z, Pro R, Pro S, Re and siface.
- To apply the concept of conformational analysis for cyclic and acyclic systems.
- To determine the reaction mechanism by kinetic and non-kinetic methods, mechanism and applications of aliphatic nucleophilic substitution reactions.
- To get a detailed picture of electrophilic, nucleophilic and free radical addition reaction mechanisms with stereochemical aspects. Mechanism of carbene, nitrene intermediates and application in name reactions.
- To explain the reaction mechanism and stereochemistry of E1, E2 and E1CB and to predict its regioselectivity.

Course Title: Chemical Kinetics

- To acquire in depth knowledge about theories of chemical kinetics and to calculate specific rate, activation energy and frequency factor.
- To calculate Michaelis-Menten constant for enzyme – substrate binding by Lineweaver-Burk plot.

- To analyze kinds of radiation utilised in several fields of research and industry
- To gain knowledge about kinetics of complex reactions and fast reactions
- To distinguish various adsorption isotherms and heterogeneous catalyst reactions

Course Title: Coordination Chemistry

- To discuss about the theories of bonding in coordination complexes
- To evaluate about the formation, reaction mechanism stability constant, and the various methods of determination of stability constant and the stereochemistry of the inorganic complexes.
- To explain the electronic and magnetic properties.
- To outline the mechanism of electron transfer reactions and Marcus Hush theory
- To predict the substitution reaction of complexes
- To explain the inorganic cages, clusters and rings which are very much useful for leading current research area of materials science

Course Title: Analytical Chemistry

- To build a better understanding of “Analytical Chemistry”; to evolve proper analytical data and practice to report the results with uncertainty component.
- To explore the analysis of complex chemical materials/ manufactured chemical matrices very systematically with suitable analytical methods.
- To demonstrate the instrumental based chemical analysis in all the arena of chemical processes and products through separations, quantifications and structural determination of chemicals
- To establish the competency of chemical analysis in the applied research, chemical processes and testing/quality control laboratories with regulatory compliances.
- To design new analytical routes for the day to day evolution of newly discovered chemical products and invent the characters of chemicals.

Course Title: Quantum Chemistry and Group Theory

- To analyze the need for quantum mechanics, relate quantum mechanical operators to observables and the use of operator algebra to solve simple eigenvalue equations, relate molecular phenomena viz translational, rotational and vibrational motion to model systems and solve Schrodinger equation to arrive at the eigenvalues

- To derive eigen values and wave functions of H and He atom using approximation methods. Concept of antisymmetric wave function and solve Hartree and HartreeFock equation for helium atom
- To apply Molecular orbital and valence bond treatment to simple homonuclear diatomic molecules- H_2^+ & H_2 , MOT of higher diatomic molecules, HMO treatment of simple conjugated systems
- To distinguish molecular and crystallographic symmetry, apply multi symmetry operations to derive character tables
- To gain knowledge of symmetry based selection rules for vibrational and electronic spectroscopy and predict the spectra of molecules

Course Title: Organometallics and Bioinorganic Chemistry

- To understand the structure, bonding, preparation and reactivity of organometallic compounds. Students will learn about synthetically useful transformations including oxidations, reductions, organometallic reactions, and reactions of electron deficient species. The emphasis will be on developing a mechanistic understanding of selectivity and synthetic strategy.
- To gain information on the mechanism of the catalytic processes of organometallic complexes that is useful for the current synthetic organic chemistry field.
- To understand elaborately on the content of biological inorganic processes that helps the students in the future research of biomimetics and computational chemistry.
- To gain complete knowledge on the oxygen carriers and iron sulphur proteins and able to Explain how metal ions take part in biological system and their physiological effect on biological system.
- To comprehend photosynthesis and photosystem1 & photosystem2, vitamin B12 model system and their reaction

Course Title: Chemistry of aromatic Compounds and Concerted Reactions

- To use oxidation and reduction reagent for preparing a new synthetic compound.
- To apply the concept of aromaticity to identify aromatic, anti-aromatic and non-aromatic compounds
- To apply logically the concept of direction for both electrophilic and nucleophilic reactions in aromatic compounds

- To identify the different types of rearrangement reactions and predict the mechanisms involved
- To use the Woodward-Hoffmann rule to predict the stereochemistry of product under thermal and photochemical conditions for different types of pericyclic reaction

Course Title: Organic Chemistry Practical

- To get hands-on experience in the separation of two component mixture, purification and identification of the functional groups present.
- To Expertise in various preparatory methods of organic compounds by single and double stage methods
- To use various purification techniques and extraction methods involving natural products.

Course Title: Inorganic Chemistry Practical

- To Train the students in a semi-micro qualitative analysis of inorganic mixture and help the students excel in the R& D laboratories.
- Explore their knowledge in the volumetric analysis of metal ions.
- Basic exposure to prepare the pure metal complexes
- Makes awareness to separate the metal ions through chromatography techniques

Course Title: Physical Chemistry Practical

- To determine the order and calculate the rate constant for the reaction
- To draw and interpret the phase diagram of two component systems
- To apply distribution law to find the partition coefficient and equilibrium constant.
- To verify Freundlich adsorption isotherm.

Course Title: Chemistry of Natural Products

- To explain the fundamental concept of nucleic acids and its functioning.
- To propose the total synthesis of peptide and to elucidate the structure of various steroids.
- To write the synthesis of camphor α , β - carotenoids and lycopene.
- To outline the synthesis of complex organic compounds like morphine cocaine reserpine and synthesis of flavones iso flavones and anthocyanin.
- To gain expertise in the bio synthesis of cholesterol terpenoids alkaloids amino acids and bile acid.

Course Title: Spectroscopy – I

- To acquire knowledge about the principle of micro wave ,Infrared spectroscopy , FTIR and IR spectra of poly atomic molecules
- To predict the structure of organic compounds and interpret spectrum of a molecule from its IR data and Raman spectra to organometallic compounds and simple inorganic compounds
- To learn about UV-Visible spectroscopy and apply the knowledge gained to Calculate λ_{max} values for a molecule
- To predict the term symbols,interpret the Orgeldiagram , Tanabe- Sugano diagram, electronic spectra of inorganic and organometallic compounds.
- To apply the concept of PES, UPS , ESCA , Auger spectroscopy and NQR in the study of surface characterisation of Inorganic compounds

Course Title: Synthetic Methodology

- To apply the retrosynthetic approach to develop methodology for synthesising new compounds involving C-C and C=C.
- To logically approach the usage of various reagents for organic synthesis
- To apply the methodology involved in advanced name reactions for synthesising new compounds
- To approach synthesis of complex organic compounds in a logical manner.
- To apply green chemistry principle for synthesis of organic compounds

Course Title: Thermodynamics and Electrochemistry

- To gain knowledge on basic concepts of ensembles, statistical probabilities in the filling of atomic and molecular energy levels, partition functions and their derivation.
- To acquire skill to relate molecular partition functions with thermodynamic and kinetic parameters and derive mathematical expressions
- To analyze and apply concepts of partition function to heat capacities of solids and gases, black body radiation , electron gas in metals.
- To familiarize the concepts of ion-ion interactions, ion solvent interactions, calculations of ionic activity and ionic strength
- To derive mathematical expressions for electrocapillary, single and multi-step electrochemicals and exchange current density.

Course Title: Solid State and Nano Chemistry

- To explain the complete description of chemistry behind the solids; learnt the preparation, characterization of solids and describe the principles concerning solid state structures
- To predict the advances in solar energy harvesting materials for fabrication of alternate energy materials
- To develop magnetic materials and superconducting materials for advanced material fabrications
- To relate diffraction intensities mathematically to structural parameters and derive extinction conditions
- To describe specific crystal structures by applying basic crystallographic concepts and describe the experimental use of the diffraction phenomenon and give an account of the generation of X-ray radiation and its effects of on matter

Course Title: Photochemistry

- To explain the fundamentals of photochemistry, Absorption and Emission of radiation, Stern Volmer analysis. Quantum efficiency and Molecular structure and photo physical and photo chemical reactivity .
- To demonstrate the fast reaction techniques such as flash photolysis and fluorescence and life time measurements
- To discuss about Photo chemistry of ketones, Norrish Type-I, Norrish type –II reactions, Photochemistry of olefins, Paterno – -Buchi reaction and synthesis of Vitamin D.
- To explain the various types of inorganic photochemical reactions, mechanism of solar energy conversion using ruthenium bipyridyl complexes
- To reviv about solar spectrum, Photo chemistry of vision, photocatalysis and photodynamic therapy.

Course Title: Spectroscopy II

- To explain the bonding properties related structural identification of coordination complexes.
- To compute magnetic properties based structural determination coordination complexes and some specific inorganic elements.

- To discuss principle, instrumentation of Electron Spin Resonance spectroscopy and its applications and application of free electron character available in a molecular entity to predict structure of complexes.
- To explain the surface characterization of inorganic compounds
- To discuss the principles, chemical shifts, coupling constants, and application of ^1H , ^{19}F , ^{31}P and solid state NMR spectroscopy.
- To discuss the Principles and instrumentation of different types of mass spectrometer.
- To Outline Salient features of fragmentation pattern of organic compounds.

Course Title: Electro Analytical Practical

- To explain the principle of conductivity, potentiometry and colorimetry experiments.
- To determine the strength of unknown solutions by potentiometric and Conductometric methods.
- To determine the strength of unknown solutions by colorimetry

Course Title: Analytical Chemistry Practical

- To imbibe the techniques of analysis of complex chemical materials
- To quantitative estimation of organic compounds and inorganic metal ions
- To interpret all spectro-analytical data for molecular identification

28. M.Sc. Mathematics Programme Specific Outcomes:

- Develop specific knowledge in main subfields of pure and applied mathematics to apply them independently to solve problems of real life situations.
- Demonstrate an understanding of Abstract Algebra, Analysis, Differential, Difference Equations, Topology, Geometry, Graphs, Fuzzy concepts, Stochastic Processes, Number Theory, Decision Making and Programming in C++.
- Demonstrate skills in analyzing concepts and solving given problems at a high level of abstraction.
- Initiate students to write review articles of research papers which infuses to do Research further.
- Create ability to apply mathematical methodologies in various sectors like banking, IT, TNPSC, UPSC, etc.
- Inculcate knowledge in basics of each subject which makes students of different

performing levels to learn with ease.

- Transform students to become motivated Teachers, Professors and Researchers in the fields of mathematical sciences globally.

M.Sc. Mathematics Course Outcomes:

Course Title: Core Paper-I: Algebra– I

- Discussion 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.
- Built up 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.
- Study the canonical forms, triangular forms and nilpotent transformations.
- Study the Jordan form, rational canonical form and companion matrix of the polynomial on finite dimensional vector space V over F and linear transformation T .
- Discussion Trace, Transpose, Hermitian, Unitary and Normal of linear transformation, solving the problems.

Course Title: Core Paper II: Real Analysis – I

- We discuss functions of bounded variation, a class of functions closely related to monotonic functions.
- We study the Riemann-Stieltjes integral and its properties and related problems.
- We discuss the Riemann integral and its properties and related problems.
- We study the sequence of functions and related problems.
- We discuss the pointwise convergence and uniform convergence and related problems.

Course Title: Core paper-III: Ordinary Differential Equations

- Demonstrate the second order homogeneous equations-Initial value problems-Linear dependence and independence-Wronskian and a formula for Wronskian.
- Use knowledge the homogeneous and non-homogeneous equation of order n –Initial value problems-Annihilator method to solve non-homogeneous equation.
- Build up the initial value problems -Existence and uniqueness theorems – Solutions to solve a non- homogeneous equation.

- Communicate the second order equations with regular singular points –Exceptional cases – Bessel equation.
- 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: Core Paper-IV: Graph Theory

- Demonstrate Graphs, Sub graphs and Trees which helps in real-life to track the path or know the direction of the road using GPS.
- Demonstrate Cut Vertices and Edge Connectivity and Vertex Connectivity which is a vital component in designing different Networks like Neural, Molecular and Communication etc.
- Demonstrate Euler Tours, Hamilton Cycles and Edge Chromatic Number that aids to create circuits and in geographical map coloring.
- Demonstrate Independent Sets, Cliques and Vertex Colorings to find the optimal lines in Communication Network .
- Demonstrate Plane, Planar Graphs and to study related Theorems on it which helps to find the uninterrupted gas pipe lines simulations in Civil Engineering.

Course Title: Elective Paper 1: Fuzzy Sets and their Applications

- Fuzzy sets and various operations on fuzzy sets are introduced.
- Fuzzy graph, fuzzy relations and fuzzy subset induced by a mapping are learnt.
- Similitude, Dissimilitude, order relations are discussed.
- Reduced polynomial forms and composition of intervals are introduced.
- Fuzzy groupoids, Fuzzy monoids and Fuzzy groups are analyzed.

Course Title: Core Paper-V: Algebra – II

- Establish the relation of one field to another and the degree of extension field.
- Determine the root of a given polynomial $p(x) \in F[x]$ on extension field K over F .
- 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.
- Determine all possible finite fields and many of their important properties and discussion of Wedderburn's theorem, Finite division rings on finite fields.
- Contemplate the solvability by radicals and solve the problems by using it, derivation of

Galois groups over the rational.

Course Title: Core Paper-VI: Real Analysis – II

- We discuss a class of measurable sets on the real line and the measurable functions and related problems.
- We study 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.
- We discuss the Fourier series and Fourier integrals and related problems.
- We study the Directional derivative and the total derivative and related problems.
- We discuss Implicit functions and Extremum problems and related properties.

Course Title: Core Paper-VII: Partial Differential Equations

- Demonstrate the comprehensive knowledge to classification of Second Order PDE – Canonical Forms.
- Recognize the importance of Occurrence of the Laplace and Poisson Equations.
- Plan and execute the Occurrence of the Diffusion Equation –Boundary Conditions and problems.
- 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.
- Core competencies the Green's function for Laplace equation – the methods of Images – the eigen function method.

Course Title: Core Paper-VIII: Probability Theory

- Knowledge on Random Events, Random Variables Distributions and Distribution Functions.
- Recognize the importance of Parameters, Order Parameters of the Distribution and Two types of Regression.
- Apply Characteristic Functions and its Properties.
- Build up on various Probability Distributions.
- Execute on Limit Theorems and Laws of Large Numbers.

Course Title: Extra Disciplinary Paper -1: Object Oriented Programming with C++

- Outline the essential Structures, Functions and Function Overloading of C++ Programming Language.
- Understand Classes, Objects , Program with C++ ,Static Members, Objects as Arguments, Friend Functions and Returning Objects.
- Elaborate Constructors, Destructors, Multiple Constructors in a Class and Rules for Overloading Operators.
- Explain the concepts of Inheritance, Pointers, Virtual Functions and Polymorphism.
- Describe Managing Console I/O Operations, Classes for File Stream Operations and File Modes.

Course Title: Core Paper-I: Complex Analysis - I

- Establish the Cauchy's Integral Formula - The Integral formula - Higher derivatives.
- Demonstrate the general form of Cauchy's Theorem: Chains and cycles- Simple Connectivity – Homology.
- Evaluate Definite Integrals and Harmonic Functions and related problems.
- Contemplate Harmonic Functions and Power Series Expansions and exercise problems.
- Demonstrate Partial Fractions and Entire Functions.

Course Title: Core Paper-X: Topology

- We discuss the topological space, open and closed sets, limit points and continuous functions are introduced as natural generalizations of the real line and Euclidean space.
- We study the connectedness and compactness and related problems.
- We discuss the countability and separation axioms and related exercises.
- We study the product topology and Tychonoff theorem and related problems.
- We discuss the homotopy of paths and fundamental group and related exercises.

Course Title: Core Paper-X: Operations Research

- Formulate linear integer programming models and discuss the solution techniques using branch-and-bound algorithm and cutting plane algorithm.
- Explain Dynamic Programming Models along with computations by recursion and applications to problem of Dimensionality.
- 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).

- 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.
- Analyze the general Nonlinear Programming algorithm, Gradient method and Quadratic Programming.

Course Title: Core Paper-XII: Mechanics

- Demonstrate the Generalized Co-ordinates, Virtual Work, Energy and Momentum.
- 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.
- Knowledge on Hamilton's Principle, Equations and Other Variational Principles.
- Build up Hamilton-Jacobi form and Stackels conditions are derived.
- Analysis the Differential Forms, Generating Functions, Special Transformations and Lagrange and Poisson Brackets

Course Title: Elective Paper – III: Number Theory and Cryptography

- To discuss about Elementary Number Theory, Time Estimates for doing arithmetic, divisibility and Euclidean algorithm, Congruence, Application to factoring and related problems.
- We study about Introduction to Classical Crypto systems, some simple crypto systems, Enciphering matrices DES and related problems.
- To discuss about Finite Fields, Quadratic Residues, Reciprocity and relate problems.
- 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.
- 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 ,uniform convergence and related problems.

Course Title: Core Paper-XIII: Complex Analysis – II

- 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.

- 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.
- Comprehend Elliptic functions, simply periodic functions and doubly periodic functions.
- Impart knowledge on Weierstrass Theory, Weierstrass p-function, functions $\wp(s)$ and $\zeta(s)$, The differential equation, modular equation $\wp(\omega)$, The Conformal mapping by $\zeta(\omega)$ and related problems.
- 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: Core paper-XIV: Differential Geometry

- Knowledge of the Curves, parametrisation, arc length, level curves, curvature, plane and space curves and related problems.
- Recognize the importance of the patches 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.
- Demonstrate the second fundamental form, Curvature of curves on a surface, normal, principal, Gaussian and mean curvatures, Gauss map and related exercises.
- Apply on geodesics, geodesic equations, Geodesics as shortest paths, geodesic coordinates and related problems.
- Analyse the theorem egregium, isometries of surfaces, Codazzi - Mainardi Equations, compact surfaces of constant Gaussian curvature and related exercises.

Course Title: Core paper-XV: Functional Analysis

- We discuss the Normed spaces, Continuity of linear maps, Hahn-Banach Theorems, Banach Spaces and related problems.
- We study the Uniform boundedness principle, Closed Graph and Open Mapping theorems Mapping theorems, Bounded Inverse Theorem, Spectrum of a bounded operator and related problems.
- We discuss the Duals and Transposes, Weak and weak *convergence, Reflexivity and related exercises.

- We study the Inner Product Spaces, Orthonormal sets, Best approximation, Projection approximation, Projection and Riesz Representation theorems and related problems.
- We discuss the Bounded operators and adjoints, Normal, unitary and self adjoint Operators, Spectrum and Numerical range and related exercises.

Course Title: Elective Paper-IV: Mathematical Statistics

- Student t-distribution, chi-square distribution, Fishers Z distribution are learnt.
- Various significance tests are introduced.
- Various methods of estimations are learnt.
- One way and two way classifications of Analysis of variance are learnt.
- Sequential analysis is learnt.

Course Title: Elective Paper-V: Stochastic Processes

- State the defining properties of various stochastic process models.
- Sample on a computer any type of continuous or discrete time stochastic process.
- Identify appropriate stochastic process model(s) for a given research or applied problem.
- Provide logical and coherent proofs of important theoretic results.
- Apply the theory to model real phenomena and answer some questions in applied sciences.

29. M.Sc Zoology Program Specific Outcome

- Master the subject and gain confidence to take up research.
- Compete and clear competitive exams like **CSIR – NET, UGC-NET in Life Sciences, SET –Tamilnadu.**
- Equip students by involving and exposing them to industries and research institutes through **internship training and projects.**
- Appreciate diversity of animals by analyzing anatomy in relation to habitat and behavior.
- Expose students to Recent Advances in **DNA Fingerprinting techniques**, cytological techniques and immunological techniques.
- Help students to become **entrepreneurs in the field of Aquaculture**, Ornamental fishes and Fishery biology.
- Equip students for employment opportunities in
 - Industry
 - Research and Education
 - Bioethics

- Patenting
- EnvironmentalProtection
- Conservation
- Technical and MedicalProfession.

M.Sc Zoology Course Outcome

Course Title: Core Paper 1 - Functional Morphology and Phylogeny of Invertebrates

- To explain the level of organization and coelomate evolution.
- To explain the reproduction and cell differentiation in porifera
- To discuss the polymorphism and metamerism of coelenterate
- To discuss about the parasitism in platyhelminthes
- To explain the larval stage of annelids and arthropods with its significance
- To discuss pheromones in insect and endocrine organs in Crustacea.
- To describe the larval forms and its evolutionary significance of echinoderms
- To analyze the advanced features of cephalopods and torsion in gastropods.
- To describe the characteristic features of minor phyla.

Course Title: Core Paper 2 – Cell and Molecular Biology

- To demonstrate cytological techniques, chromatography, autoradiography, electrophoresis, blotting techniques and tissue culture- cell imaging.
- To explain the structural organization and function of intracellular organelles.
- To discuss the enzymology of DNA and RNA, replication and types of RNA.
- To explain the Genetic code, RNA processing, information transfer in prokaryotes and eukaryotes
- To evaluate the signaling concepts, cell surface receptors and pathways of intracellular signal transduction.

Course Title: Core Paper 3 - Genetics – A Molecular Approach

- To analyze the concept of gene, the Regulation of genes and the mechanism of epigenetics.
- To plan and design projects on epigenetics.
- To explain Chromosomal aberrations in human beings.
- To prepare flowchart on pedigree analysis.

- To analyze and interpret the causes, types and the mechanism of mutation.
- To identify the types of gene therapy for human diseases.
- To perform the mapping of genes.

Course Title: Elective-1- Fish biology & Fisheries

- To assess the fish behavior and to identify the fish characters.
- To explain the fish digestion, physiology of digestion and respiratory behavior of primitive vertebrates.
- To produce fish seed through induced breeding techniques and identify the emerging diseases in aquaculture industry.
- To apply hybridization techniques to produce the new variety of fish species.
- To Build hatchery for producing finfish and shellfish.
- To develop technology for larval and nursery rearing of fish and prawn.

Course Title: Core Paper 4: Functional Morphology and Phylogeny of Chordates

- To explain the origin of chordates, classification, affinities of cephalo and urochordata.
- To describe the physiology of digestion in vertebrates and symbiotic digestion in ruminants.
- To discuss the evolutionary and structural peculiarities of cyclostomata, dipnoi and coelocanth fishes.
- To list out the economic importance of fishes and parental care in fishes.
- To discuss the origin and evolution of mammals and its adaptive radiation.
- To compare the integumental derivatives, jaw suspension, visceral arches and respiratory organs in chordates.
- To compare the heart, urinogenital organs, excretion and the types of circulating fluids.

Course Title: Core Paper 5: Comparative Animal Physiology

- To measure the blood volume, plasma volume and to demonstrate the blood group system in humans.
- To compare the structural and functional changes in circulatory system.
- To measure the blood pressure, ECG in human and analyze the results.
- To explain the respiratory and respiratory parts of the body comparatively between animal groups.

- To commentate about the diseases due to respiratory defects.
- To identify the major features of the brain and spinal cord to describe the structural and functional relationships between these structures and to apply this knowledge to further research and clinical studies.
- To evaluate the properties of excretion processes of animals in connection with habitat.
- To explain the role of endocrine system in maintaining homeostasis, the consequences of under and over production of hormones.
- To compare contrast the different mechanisms of action of hormones.

Course Title: Core Paper 6: Microbiology

- To discuss the History, scope, Milestones in microbiology, microbial taxonomy, classification, bacterial physiology, growth, nutritional requirements and enumeration of bacteria.
- To list out the pathogenic microbes, its cure, control and prevention.
- To list out the role of microbes in the environment.
- To discuss the role of microorganisms in food production.
- To evaluate the industrial uses of microbes and the types of bioreactors.

Course Title: Elective-2- Aquarium Fishes

- To identify the fresh and marine water aquarium fishes of India and its export potential.
- To develop and formulate feed for aquaculture industry.
- To setup the aquarium tanks for commercial purpose.
- To produce ornamental fishes through induced breeding techniques and indentifyidentify the emerging disease in ornamental fishes.
- To produce ornamental fish for export purpose.

Course Title: Core Practical 1: Inertebrata, Choradta& Fishery Biology

- To observe, identify and comment on the medical importance of helminthes and protozoans.
- To analyze the evolution of different types of coelom in invertebrates.
- To identify the larval forms and fossils of invertebrates.
- To discuss the economic importance of invertebrates.
- To explain the digestive and nervous system of prawn, gryllotalpha, grasshopper, sepia by dissecting and displaying the system.

- To describe and identify the important Prochordates and chordates.
- To explain the arterial and venous system of shark and teleost by dissecting and displaying the system.
- To identify the fish based on morphometry.
- To describe the parasites of fish, seaweed species, live feed organisms and its use in research.
- To determine the gonado-somatic index, fecundity and the age of fish using scale method.

Course Title: Core Practical 2: Cell & Molecular Biology, Animal Physiology, Genetics and Microbiology

- To observe, identify and comment on the medical importance of helminthes and protozoans.
- To measure the cell size using ocular and stage micrometer.
- To demonstrate the differential count of leucocytes in human blood.
- To describe and demonstrate various histochemical techniques in tissue processing and to localize the macromolecules.
- To culture drosophila and identify the mutants.
- To demonstrate the ABO blood group system in humans.
- To prepare the human karyotype and identify the syndromes.
- To observe, identify the gram positive and gram negative bacteria and comment on its characters.
- To analyze and interpret the respiratory quotient in terrestrial animal
- To compare the known amino acids from the unknown using thin layer chromatography
- To demonstrate the RQ, salt loss and salt gain in fishes.
- To estimate the amount of Hb, bleeding time, clotting time and ESR in human blood.

Course Title: Core paper 7: Developmental Biology

- To discuss the basic concept of development biology.
- To explain the gametogenesis, fertilization and early developmental stages in animals.
- To elaborate the hormonal control of ovulation and pregnancy.
- To explain medical implication of developmental biology.
- To explain the gene activity during gastrulation.

- To study the application of modern technique in developmental biology.
- To analyze the different involved in human cryopreservation and cloning.

Course Title: Core Paper 8: Entomology

- To identify insects, their habitats and physiology.
- To explain the insect characters and their economic importance.
- To evaluate insects as crop pest and their habitats.
- To prepare various methods of pest control for agricultural purpose.
- To formulate the pesticides, plant protection appliances and pest management.

Course Title: Elective 3: Environmental Biology

- To explain the concept of physical environment such as biotic and a biotic and its interactions.
- To describe the major biomes with the special references.
- To explain the different zones of marine habitat.
- To analyze the population ecology and its growth curve in the concept of meta-population and age structured population.
- To discuss the different approaches of biodiversity management and conservation.
- To bring awareness about different environmental pollutants and its remediation.
- To describe the community ecology, levels of species diversity and ecosystem structure and function.
- To study the radiation ecology and its effects on biosphere.

Course Title: Elective 4: Biophysics and Biostatistics

- To demonstrate the principle and applications of light and electron microscopy for biological investigations.
- To apply the methods of histochemistry in tissue processing
- To demonstrate and apply the different types of Chromatography, Electrophoresis and Spectroscopic techniques in biological investigations.
- To explain the phenomenon of radioactivity and the biological applications of radio isotopes.
- To design projects on measuring the radioactivity and its adverse effects on humans and other species.

- To compile, classify and design statistical data into different diagrammatic and graphical forms.
- To compute, analyze, correlate and interpret the statistical data for the measures of dispersion and for the measures of central tendencies.
- To apply statistical tools for dissertations.

Course Title: IDP 1 - Maternity & Child Care

- To describe the structure and function of reproductive organs in male and female.
- To discuss the morphological and hormonal changes during menstrual cycle.
- To explain the process of spermatogenesis and oogenesis.
- To describe the mechanism of fertilization, implantation and about twins.
- To highlight the importance of birth control, its types and the causes of infertility.
- To discuss the treatments for infertility and various testing methods of pregnancy.
- To learn the nutrition, vaccination schedules and theories of child behaviour

Course Title: IDP 2 – Research Methodology

- To explain the fundamentals of research and characteristics of scientific method
- To identify the research problem and design the research accordingly
- To analyze and interpret the data using various statistical methods, charts and diagrams
- To get exposure in journals, impact factor , plagiarism and ethical issues in research
- To interpret data and exposure to paper writing
- To identify different softwares for paper formatting, Reference Management and for detection of Plagiarism Biopiracy

Course Title: Core Paper-9- Biochemistry

- To explain the biomolecules and their characteristic nature.
- To demonstrate and analyze the clinical and biochemical tests based on the metabolism.
- To classify proteins and its metabolisms.
- To classify lipids and its metabolisms.
- To list out the xenobiotic compounds and their role in human body.

Course Title: Core paper 10: Immunology

- To describe the scope of immunology, types of immunity, about lymphoid organs and Antigen class determinants.

- To explain HLA in Transplantation immunology, tumour immunology, autoimmune diseases and types of hypersensitivity.
- To determine the structure, functions and types of immunoglobulins.
- To list down the process of hybridoma technology and antigen antibody reactions.
- To explain the tumor suppressor genes, metastasis and therapeutic interventions of uncontrolled cell growth.

Course Title: Elective 5 -Evolution of Life

- To explain the evolutionary thoughts and factors with the reference of Lamarckism and Darwinism.
- To discuss the cosmic evolution and origin of life (prokaryotes and eukaryotes).
- To study the paleontological and geological time scale.
- To describe the concept of natural selection and genetic polymorphism.
- To analyze animal coloration and mimicry, micro and macro evolution and types of adaptation.
- To illustrate the concepts of sociobiology.

Course Title: Practical – III: Developmental biology, Entomology & Environmental Biology

- To Prepare the histological slides of organogenesis.
- To demonstrate different hours of chick embryo.
- To explain induced ovulation and fertilization in fish.
- To analyze the egg density in fish.
- To identify the pest of stored grains, vegetables, pulses and its control
- To develop plant protection appliances.
- To analyze and interpret the respiratory quotient in terrestrial animal
- To compare the known amino acids from the unknown using thin layer chromatography
- To demonstrate the RQ, salt loss and salt gain in fishes.
- To analyze the hydro biological parameters in different water samples
- To identify the freshwater and marine planktons.
- To compare the adaptations of animals in rocky, muddy and sandy shores.
- To explain the animal associations like parasitism, commensalism and mutualism.

Course Title: Practical – IV: Immunology and Biochemistry

- To quantify the hemoglobin by haemagglutination and titration method.
- To identify the lymphoid anatomy of rat.
- To demonstrate the preparation of antigen in RBC.
- To demonstrate the immuno-electrophoresis.
- To estimate the protein content from fish tissue by Lowry's method.
- To estimate the carbohydrate from fish tissue by anthrone method.
- To estimate the lipid from fish tissue by Zaksmethod.
- To detect the amino acid by TLC Method.
- To study the principle and applications of kymograph, spectrophotometer, sphygmomanometer, electrophoretic unit.

30. M.C.A Program Specific Outcomes:

- 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.
- Analyze the problem requirements, prepare and use appropriate architectural and detailed designs to build software components using Object Oriented Analysis and UML diagrams.
- 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.
- 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,
- 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.

MCA Course Outcomes:

Course Title: Core-1 Problem Solving and Programming using C

- Understand the fundamental concepts of Problem solving
- Analyze the given problem statement with appropriate programming standards
- Construct C application using control statements, Arrays, Structures, Union and Functions
- Identify the usage of Pointers, functions, dynamic memory allocation and implement them in program
- Demonstrate Graphics using various drawing objects

Course Title: Core-2 Computer Communication and Networking

- Recognize Computer Networks, Topology, categories of networks and OSI layers
- Explain about Data Link Layer, Error Detection and handling, protocols
- Describe about Network Layer, Switching types, Connection oriented and connection less services, Routers and Routing algorithms.
- Interpret LAN protocols, Token rings, Token bus, Addressing and frame format, LAN Security, Threats etc
- Recognize TCP/IP Networking, Architecture, Internetworking, Network characteristics, Network Addressing and Routing

Course Title: Core-3 Open Source Technologies

- Describe the basics of Open Source software and Linux Operating System
- Demonstrate files in Unix environment with file Attributes and permissions
- Experiment with vi editor. Execute basic Unix Commands to filter, sort
- Paraphrase Regular Expressions and utilize the concept in programming
- Classify Processes- Parent, child, foreground, background and implement them in programs

Course Title: Core-4 Software Engineering

- 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.
- Illustrate how to Elicit Requirements, Validate requirements and Analyze them.

- Create model for Function-oriented and Object – Oriented software development.
- 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
- 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
- Interpret W5HH principle, Project Management techniques, and Decomposition techniques.
- Understand Software Measurement and Metrics used.
- Experiment with the methodology of Project Estimation, Project Scheduling, Risk Assessment and Mitigation

Course Title: Core-5 Practical - I: Programming in C Lab

- Analyze the given problem
- Formulate Algorithm for solving the given problem
- Construct C program based on the algorithm
- Evaluate the correctness of syntax and debug errors if any.
- Examine the output to verify the correctness of logic

Course Title: Core-6 Practical - II: Open Source Technology Lab

- Analyze the given problem
- Formulate an Algorithm for solving the given problem
- Construct a shell program based on the algorithm
- Evaluate the correctness of syntax and debug errors if any.
- Examine the output to verify the correctness of logic

Course Title: Soft Skill-1 Language and Communication Skill

- Understand and Apply Twinning Functions of Listening and Speaking
- Experiment Twinning Functions of Reading and Writing.
- Experiment and improve Individual Communication skills.
- Improve Intermediary Communication skills
- Develop Social Communication skills

Course Title: Core-7 Data Structures and Algorithms

- Sketch programs using abstract data types, complexity analysis, arrays, linked lists and its types, stacks and queues.
- Explain Binary trees, tree traversal, searching , graphs- implementation and traversal, and Minimum cost spanning trees
- Demonstrate algorithms like Sorting, Searching.
- Appraise 8-Queens, Job sequencing and knapsack problems solving
- Discriminate Backtracking, Greedy Method, Divide and conquer methodologies to formulate algorithm

Course Title: Core-8 Advanced Internet Technologies

- Discuss about HTML5 and CSS3,
- Create and viewing a webpage.HTML document and Structure – using Text and List, tables in HTML.
- Experiment with forms , Images and managing media in HTML.
- Illustrate webpage using Style Sheets
- Create Webpage using Java script.
- Develop Webpage using VB script
- Recognize XML elements, DTD types

Course Title: Core-9 Operating Systems

- Describe the basic concepts in Operating systems like Multiprogramming, Time Sharing, Services, System calls, System programs, Process and Concurrent Processes. Explain CPU scheduling and differentiate Scheduling algorithms
- Realize about Process Synchronization done by Operating System, Explain Classical problems in Synchronization, Inter process communications, Deadlocks and Deadlock handling
- 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
- Explain Files, their protection, operations, access methods, File system organization and directory structure.

- Recognize Protection and security provided by an Operating System and realize the security problems. Examine intrusion, detection and cryptography.

Course Title: Core-10 Advanced Java Programming

- Apply concepts of Java servlet and create efficient applications that use Java Servlet.
- Apply concepts of Java Server Pages and create efficient applications that use Java Server pages
- Employ RMI and create efficient applications
- Experiment with EJB and create efficient applications that use EJB
- Recognize Spring Framework and Beans

Course Title: Core-11 Practical - III: Advanced Internet Technologies Lab

- Construct interactive web pages using HTML, CSS
- Demonstrate programming knowledge in VBScript
- Demonstrate programming knowledge in Java Script
- Evaluate the correctness of syntax and debug errors if any.
- Examine the output to verify the correctness of logic

Course Title: Core-12 Practical - IV: Advanced Java Programming Lab

- Create interactive web application using HTML and Servlet
- Create interactive web application using HTML and JSP
- Create interactive web services using RMI
- Evaluate the correctness of syntax and debug errors if any.
- Examine the output to verify the correctness of logic

Course Title: Soft Skill-2 Presentation Skill

- Understand about soft skills required for Presentation skill like positive attitude, Active Listening , Public Speaking and Body Language
- Experiment methods to develop positive attitude.
- Experiment and improve Active Listening and Effective Public Speaking.
- Improve Persuasive Writing skills
- Understand and Develop Effective body language

Course Title: Core-13 Web Development using PHP and MySQL

- Examine Apache, MySQL, PHP, and Open Source.
- Explain the Overview of PHP Structure and Syntax
- Recognize and demonstrate fundamentals of PHP language like variable, constants, control statements, built in functions, cookies and sessions
- Experiment PHP with Arrays of Data and files.
- Examine Form elements, form manipulation, and table manipulation.
- Integrate and examine PHP With MySQL Server

Course Title: Extra-Disciplinary Accounting and Financial Management

- Understand the fundamental concepts of Accounting like Double Entry Book Keeping, financial statements like Trial Balance, Balance Sheet.
- Analyze and interpret accounts and Financial statements
- Explain Break-even analysis and Marginal Costing
- Experiment Budget/Forecasting and analyze Characteristics of functional budgets.
- Explain Project Appraisal and Capital Investment Decision Making

Course Title: Core-14 Data Analysis using Python

- Discuss basics of python, Object Oriented concepts-Classes, Objects, Constructors, overloading.
- Employ File Creation and Data structures such as List, Set, Dictionary, Tuples to create efficient Python Applications.
- Demonstrate Data Preparation, Data exploration and Visualization of results
- Develop GUI using Tkinter Module, use various controls and create python applications
- Experiment various Data Source Files, Numerical Manipulations using NumPy and Web Scrapping

Course Title: Core-15 Artificial Intelligence

- Demonstrate fundamental understanding of the history of artificial intelligence (AI) and its foundations
- Apply basic principles of AI in solutions that require problem solving, inference, perception, knowledge representation, and learning.
- Analyze and formalize the problem as a state space, graph, design heuristics and select

among different search or game based techniques to solve them.

- Demonstrate awareness and a fundamental understanding of various applications of AI
- Ability to apply knowledge representation, reasoning, and machine learning techniques to real-world problems

Course Title: Non-Major Elective Essential Statistics for Analytics

- Analyze and solve problems based on Measures of location, Measures of dispersion
- Apply the fundamental concepts of Probability to the real world need.
- Experiment problems based on Bivariate, Discrete and Continuous distributions
- Analyze problems and solve using concepts of Correlation and Regression.
- Apply the concepts of Sampling, Test of Significance based on T, F and Chi-Square with respect to Mean and Variance.

Course Title: Core-16 Practical - V: PHP and MySQL Lab

- Construct interactive web pages using HTML, CSS, JavaScript, VBScript & PHP
- Design responsive website using HTML, CSS
- Create rich and efficient Online application
- Construct a dynamic website that integrates PHP program and MYSQL database
- Deploy web application for the given problem

Course Title: Core-17 Practical - VI: Data Analysis using Python Lab

- Describe the Numbers, Math functions, Strings, List, Tuples and Dictionaries in Python
- Express different Decision Making statements and Functions
- Understand and summarize different File handling operations
- Explain how to design GUI Applications in Python and evaluate different database operations
- Design and develop Client Server network applications using Python

Course Title: Soft Skill-3 Managerial Skill

- Understand about Managerial concepts like Stress Management , Conflict Management, Interpersonal Skills, Time Management and Empowerment
- Experiment methods of Stress Management
- Experiment and improve Conflict Management skills.

- Improve Interpersonal skills
- Understand and Develop Time Management and Empowerment skills

31. Tamil Course Outcomes:

Course Title: Foundation Tamil

Semester – I:

- Appreciate Modern literary forms such as New Poetry, Fiction and plays. To demonstrate the Socio-Cultural content and aesthetic quality of these forms.
- Sensitive to modern values of Social justice, tolerance, Gender equality, Women empowerment, Pluralistic values and Social harmony.
- Evaluate critically the socio-historical background of the beginning of modern literary movements and its pioneers.
- Become Emotionally Intelligent, creatively productive and morally sensitive
- Understand the Evolution of modern Literary forms in the Back ground of Socio Cultural changes.
- Demonstrate Media skills of News Editing, News presenting and compering. To write columns and book reviews

Semester – II:

- Enlightened in the spiritual wisdom of Tamil Bhakthi Literature.
- Be compassionate, tolerant, and empathetic with high Ideals of spirituality
- Appreciate the poetics and narrative Lores in medieval literature
- Understand the ethnic and Folkloristic roots in Classical Literature.
- Effectively use Tamil language as a Tool of application. Ability to compile the content in dictionaries and encyclopaedia.
- Aware and sensitized to the values of Democratic, Pluralistic egalitarian Society.

Semester – III:

- Describe the Form and content of Moral and Epic Literature in Tamil.
- Exhibit High Ideals and Moral Values in Social life as insisted in Moral and Epic Literature.
- Analyze critically the historical and Cultural background in which the Epics evolved
- Demonstrate Skills to write Poetry, Fiction and critically evaluate literary works.
- Exhibit Theatre Skills of acting, script writing and directing.

Semester – IV:

- Understand and appreciate the aesthetics and values in Folklore Arts and Literature
- Exhibit performing skills of Dancing , Singing in Folklore arts
- Describe the classical qualities and poetics of Sangam Literature
- Exhibit high Human Ideals envisioned in Sangam Literature
- Demonstrate Computational Tamil Skills such as writing Blogs, Creating Tamil Apps and application of Tamil software.
- Demonstrate Translation Skills and Techniques.

Course Title: Basic Tamil (Non Major Elective)

(Non Major Elective to Non Tamil Students who Choose Hindi, Sanskrit and other languages as the first Language)

Semester 1

- Demonstrate proficiency in Listening, Speaking, Reading and Writing Skills in Tamil.
- Identify the parts of speech and basic grammatical elements in Tamil
- Sensitize students to the socio cultural ethos of Tamil Society.

Semester II

- Describe and practice the moral values in Tamil Literary works of Ethics.
- Demonstrate fables and moral stories in Tamil.
- Well informed in Heritage sites, Tourist Places and Geography of Tamilnadu

Course Title: Advanced Tamil

(For Non Tamil Students who choose Hindi, Sanskrit and other languages as the first Language in U.G, but have passed Tamil as first language in SSLC /Matric level)

Semester 1

- To appreciate Modern literary forms such as New Poetry, Fiction and plays.
- To demonstrate the socio-cultural content and aesthetic quality of the various literary forms.
- Demonstrate media Skills of News presenting, anchoring and Interviews
- Being Sensitized to modern values of Social justice, tolerance, Gender equality, Women empowerment , Pluralistic values and social harmony.

Semester 2

- To be enlightened in the spiritual wisdom of Tamil Bhakthi Literature.
- To be compassionate, tolerant, and empathetic with high Ideals of spirituality.
- To appreciate the poetics and narrative Lores in medieval literature

32. Hindi Course Outcomes:

Course Title: Prose, Functional Hindi & Translation

- To enhance the knowledge of various hindi prose forms like satire, essay, reports, memoir.
- To identify and formulate the situation of natural disasters and identify the issues related to it.
- To learn and develop language skills through English Hindi translations and vice-versa.
- To improve knowledge of technical words
- To practice letter writing skills
- To motivate to demonstrate human values in different life situations
- To discuss the elements of one act play and demonstrate the same.

Course Title: Short Stories, Novelette and Creative Writing

- To analyze and evaluate the current Social, Cultural & Political scenario of the country.
- To prepare Newspaper and magazines report and to enhance creative skills and presentation skills.
- To plan and execute the framework of jingles creation and presentation thereby enhance the creative skills and improve language skills.
- To develop communication skills through discussions on short stories and novels.
- Identify the social problems of the society today.
- To improve critical thinking by assessment of situations and apply it to real life situations.
- To demonstrate human values learnt from short stories.
- To develop a gender equality approach among students.
- To improve the emotional and ethical quotient of the students.
- To motivate in the creation of advertisements.

Course Title: Ancient and Medieval poetry, History of Hindi literature

- To enhance knowledge of medieval Indian society's Social, Political and Cultural milieu
- To outline the basic structure of History of Hindi literature
- To identify the various poets of the Medieval Era
- To assess and explain the impact of Hindi poets on society
- To critically evaluate the poems in their political and Social context
- To revise and analyze the poems of bhaktikal
- To apply bhaktikaleen concept in the modern context
- To demonstrate the growth of Hindi literature over the centuries

Course Title: Modern poetry and Hindi literature

- To assess the impact of Indian Freedom struggle on Indian Hindi literature
- To formulate Modern political and social ideas based on poems
- To identify the new words and phrases that came into force after the introduction of khadiboli
- To identify and compile the growth and worth of khadiboli in the 19th century
- To discuss the various forms of poems
- To compare the different eras of modern Hindi Literature
- To analyze the various elements of stories and novels

33. Sanskrit Course Outcome:

- Gaining knowledge about prose, Poetry, Kavyas, drama literature, Alankaras, Basic grammar.
- By completing this course, students would be able to handle any kind of situations and can mingle with society with the help stories of Panchatantra, Mahabharata and Hitopadesha.

34. French Course Outcome:

Semester - I:

- To inculcate the survival skills in the French language.
- Students will be strengthened in their knowledge of French language and culture.
- Skills on Grammar, vocabulary and sentence structure are improved.

Semester - II:

- Students will be able to speak on select themes in French [describe past incidents, visit to different countries]
- They will be able to write descriptive texts about their country, culture and past events.
- Improvement in the next level in the skills that they obtained in 1st semester.

Semester - III:

- Reading comprehension and written expression in French are ameliorated with the usage of short stories.
- Literary writing styles and French writings from various cultures are exposed.
- Ability to read, understand long texts with cultural references. Ability to write long texts like essays and letters.

Semester - IV:

- Acquisition of the four competencies: Reading, writing, speaking, listening.
- Ability to appear for the Certificate level language proficiency tests in basic French.

35. English Course Outcome:

First Semester - Preliminary Level

- Inculcate the values of life such as being Optimistic, Conservation of Nature and Confidence Building.
- Appreciate and associate the aesthetics of the English Language as seen through Figures of Speech, Rhymes Scheme, Diction and Syntax found in poems.
- Analyse the different characters in different times and situations and apply that in real-life situations through the reading of Short Stories and Novella.
- Apply the knowledge of the basic Parts of Speech learned through Grammar to communicate effectively.
- Develop the ability to write fluently with grammatically acceptable sentences and construct Paragraphs through Functional English.

Second Semester - Transitional Level

- Sensitize students to 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.
- 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 poems.
- Identify and explore the real intentions of characters through Short Stories. The students apply conversational skills with others which they learned through One-Act-Plays.
- To be effective in communication, knowledge of Tense and Aspect, Voice, Reported Speech, Degrees of Comparison facilitates the confidence of the learners.
- Knowledge of Language Skills including Synonyms, Antonyms, Affixes, Spelling, and Noun-Number, help the learners apply for competitive examinations.

Third Semester - Intermediary Level

- Evaluate the difference between Personal and Professional life, Right to Education, Protection of Children and Women's Rights through Prose Lessons.
- 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.
- Analyse the odd as well as the exemplary characters in life through stories.
- Explore the eccentric human actions and their consequences through Drama.
- Use the grammatical structures like different Questions, Clauses and Kinds of Sentences.
- Prepare Formal Letters with CV, Resume and Reports, Maintain a Diary of Event through Functional English.

Fourth Semester - Advanced Level

- Apply the increased proficiency at the Advanced Level for the Professional Development through Prose Lessons.
- Formulate future life with integrity and assess the intentions of individuals through poems.
- Use of the proper knowledge of facts, importance of Women's Writings, humour in mistaken Identity through stories.
- Apply their writing skills for Creative Writing in stories, Reports and Features in Journals and Newspapers.

- Formulate Circulars and Invitations; Prepare Welcome Address and Vote of Thanks.
- Use of Flawless Sentences, idioms and phrases, Foreign Expressions,
- British/American words through Language Skills.

Soft Skills - UG:

Semester I - Listening and Speaking

- Dictionary and its usage prepares the students to master the English language, the students understand the spellings of the words and use them without making mistakes in their communication.
- Dictionary plays a major role in gaining confidence in a language in today's competitive world.
- Phonetic transcription enables the students to aptly pronounce the words.
- The students are able to communicate with the native speakers using phonetics.
- Stress and Intonation helps the students identify the sounds in a word whereby their attitude, feelings and emotions are well executed in oral communication.

Semester II: Reading and Writing

- Vocabulary skills enable the students to utilize the English Language
- It also enables them to attain good command over the language.
- Idioms and Phrases serve as good ornament to communication in English.
- Reading comprehension improvises their critical thinking and analytical skills.
- Paragraph writing widens their thought process and helps them in describing their ideas.

Semester III – Personality Enrichment

- Self-disclosure assesses the student's awareness about themselves and also about how they are viewed by others.
- Anger, Stress and managing feelings make them evaluate themselves and bring out a constructive change in them.
- Interpersonal effectiveness prepares the students in being positive about themselves.
- Study Skills empower them through various techniques to enhance their memory.
- Goal setting and Managing Time prepares the students in obtaining their short term and Long term goals.

Soft Skills - PG:

Semester – 1: Personality Enrichment

- To examine the characteristics and benefits of self-disclosure.
- To demonstrate and recognize self-awareness.
- To identify the source of stress and cope with it effectively.
- To analyze the nature of anger and effectively manage it by using various techniques.
- To use study skills, learning strategies and mnemonic devices for effective learning.
- To set their goal in life and pursue it with determination.
- To study the causes of procrastination for effective time management.

Semester – 2: Workplace Communication Skills

- To analyze the components of a team and work towards team building.
- To identify their individual strengths and weaknesses.
- To explore elements of creativity and apply it in their career.
- To take informed decisions in their life.

Semester – 3: Self & Time Management Skills

- To identify what causes stress
- To list the various kinds of stress
- To formulate methods to combat stress
- To describe concept of time management
- To outline the limitations of time
- To scrutinize concepts like self-discipline and punctuality
- To emphasize the importance of adherence to time
- To synthesize work/ life balance

Semester – 4: Spoken and Presentation Skills

- To define body language
- To determine the components of a team
- To analyze the role of a team leader
- To determine the role functions in a group discussion.
- To measure a group performance and suggest ways to improve it.
- To evaluate performance in interviews.

36. Allied Mathematics Course Outcomes:

I B.SC (COMPUTER SCIENCE) / BCA

Course Title: Allied Mathematics - I

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

I B.SC (COMPUTER SCIENCE) / BCA

Course Title: Allied Mathematics - II

- Demonstrate skill in computing integrations containing an integer parameter.
- Identify the concept of difference tables and use them in computing problems involving Newton and Lagrange formulae.
- Possess a sound knowledge in solving second order differential equations involving constant coefficients.
- Skill in computing solutions to partial differential equations of different types.
- Identify the basics of Laplace transformation and apply different properties in computing problems.
- Evaluate solution of differential equations using Laplace transformation and its inverse.

II B.SC COMPUTER SCIENCE

Course Title: Operation Research

- Identify and develop operation research models from the verbal description of the real system.
- Formulate the Linear Programming Problem.

- Evaluate the LPP using the Graphical Method
- Computing the LPP using Big-M method, Two Phase Method, Duality. Conversion of Primal to Dual Problem.
- Develop a report that describes the model and solving transportation, assignment problems using different techniques.
- Demonstrate the method of sequencing problem by n jobs through 2 machines, n jobs through 3 machines
- Use CPM and PERT techniques to plan, schedule and control project techniques.

II B.SC COMPUTER SCIENCE

Course Title: Statistical Methods and Their Applications

- 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
- Convert real-world problems into probability models.
- Discuss the concept of probability, conditional probability and Baye's theorem and its applications
- Evaluate correlation between two variables and identify its types. Formulate the simple linear regression equation for a set of data.
- Discuss the test of significance based on T, Chi-Square and F distributions with respect to Mean and Variance.
- Prepare ANOVA table. . Designs of experiments carry them out and analyze the data they yield.

B.COM (A&F)

Course Title: Business Maths& Statistics

- Analyze the relationship between ratio and proportion.
- Identify the arithmetic progression & geometric progression series.
- Summation of numerical problems and the ability to solve them.
- Use the assessment of bills 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.
- Evaluate the measure of central tendency for Mean, Median, Mode

- Measure the dispersion like mean deviation, quartile deviation and standard deviation.
- Compare two variables using correlation and regression lines.
- Discuss various components of time series.
- Compute the trend values for secular and seasonal variation.
- Analyze various methods of finding index numbers for weighted and un weighted data.

B.COM (A&F)

Course Title: Business Maths& Operations Research

- 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.
- Find all possible ways of doing something using permutation, combination.
- Evaluate the distribution like binomial and exponential series.
- Identify and develop operational research models to apply the LPP to solve real life situation using graphical method and simplex method.
- Use basic ideas of transportation problems
- Apply the ideas to solve some problems
- Plan the assigning of work to different people.
- 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.

II B.COM (HONOURS)

Course Title: Business Mathematics

- Analysis and application of set theory through operators and functions
- Identify and utilize Binominal Theorem, Exponential and Logarithmic Series
- Assess limits and continuity. Differentiate polynomial equations. Locally maximize and minimize functions and apply them to cost, revenue and profit functions.
- Identify and evaluate equations through ratios and proportions. Compute possible outcomes through permutations and combinations and its application in real life scenarios.
- Compute basic interests on financial instruments such as bills, loans, savings and annuity. Solve for variables multi-variable equations with matrices.

II B.COM (HONOURS)

Course Title: Business Statistics and Operations Research

- 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.
- 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.
- Analyse Time Series and indices, measurement of trends and perform statistical quality control
- Compute linear programs through graphical and simplex methods
- Compute transportation and assignment problems

B.COM(ISM)

Course Title: Business Statistics & Operations Research - I

- 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
- Evaluate the Measures of Central tendency – Mean, Median and Mode for the given data.
- Find the measure of Dispersion - Range, Quartile Deviation, Mean Deviation , Standard Deviation – Measures of Skewness for various types of data.
- 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.
- Outline Operations Research and Formulate the Linear Programming –Formulation - Graphical and Algebraic Solution.
- Discuss Network Analysis using PERT and CPM.

B.COM(ISM)

Course Title: Business Statistics & Operations Research - II

- Discuss the Time Series Analysis using Secular trend: Graphic or free hand method, Method of semi average, Moving average
- Explain Method of least squares to fit a straight line-Seasonal variation: Method of simple average.

- 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.
- Discuss Sampling Techniques, Types of Sample and Sampling procedures.
- Explain Tests of Significance – t, Chi –Square test.
- Formulate LPP for Assignment Problem,
- Find the solution of Minimization, Maximization case in assignment problem, unbalanced assignment problem by Hungarian method.
- Formulate LPP for Transportation problem.
- Evaluate the initial solution using North West Corner method, Least Cost method and Vogel's Approximation method.
- Compute the optimal solution for the given Transportation problem using MODI method

I B.SC(IT)

Course Title: Allied Mathematics

- Compute the Eigen values and Eigenvectors. Apply Cayley Hamilton theorem
- Solve the Polynomial equations, Reciprocal equations and approximations by Newton's method numerically
- Solve Algebraic equations numerically by Gauss Seidel and Gauss Jordan methods
- Find the inverse of the matrix using Gauss Elimination method
- Evaluate the positive roots of an equation using bisection, False Position and Newton Raphson method.
- Evaluate the integrals numerically by Trapezoidal, Simpson's 1/3 and 3/8 rule and Weddle's rule

Course Title: Operations Research

- Introduce to LPP, Solve LPP by Graphical and simplex method
- Formulate LPP to Transportation problem, Find initial solution using North west corner method, Least cost method and Vogel's Approximation method. Find optimal solution using MODI method
- Formulate LPP to Assignment Problem, Solve problems by the Hungarian method
- Demonstrate Sequencing Problems and solve n-jobs through 2,3,m machines
- Solve two person zero sum games by Minimax principle and Dominance property.
- Solve 2xm and mx2 games by graphical method
- Draw Networks and discuss the critical path by Floats and PERT techniques

II B.SC (IT)

Course Title: Allied Statistics-I

- Discuss Sampling and types of Data
- Create graphs and diagrams for different types of data
- Evaluate measures of central value for different types of data.
- Compute Measures of Dispersion like Mean deviation, quartile deviation and standard deviation for different types of data.
- Compare and study the relationship of two variables using correlation and regression lines
- Analyse various methods of finding index numbers for weighted and unweighted variables over two different periods.

Course Title: Allied Statistics-II

- Discuss various components of time series. Compute the trend values for secular and seasonal variations.
- Discuss Theory of probability
- Apply Baye's theorem to problems.
- Evaluate expectations.
- Identify the different types of probability distributions and use them to solve real life problems.
- Explain test of hypothesis, its significance, uses and various types of statistical tests for samples.
- Test of hypothesis for more than 2 samples using ANOVA