Carmel College (Autonomous), Mala

Programme and Course Outcomes

2022-2023

PROGRAMME OUTCOMES

UNDER GRADUATE PROGRAMME OUTCOMES

PO1 Critical Thinking: Take informed actions after identifying the assumptions that frame our thinking and actions, checking out the degree to which these assumptions are accurate and valid, and looking at our ideas and decisions (intellectual, organizational, and personal) from different perspectives

PO2 Problem Solving: Understand and solve the problems of relevance to society to meet the specified needs using the knowledge, skills and attitudes acquired from humanities/science/arts

PO3 Effective Communication: Speak, read, write and listen clearly in person and through electronic media in English and in one Indian language, and make meaning of the world by connecting people, ideas, books, media and technology.

PO4 Effective Citizenship: Demonstrate empathetic social concern and equity centered national development, and the ability to act with an informed awareness of issues and participate in civic life through volunteering

PO5 Environment and Sustainability: Understand the issues of environmental contexts and sustainable development.

PO6 Self-directed and Life-long Learning: Acquire the ability to engage in independent and life-long learning in the broadest context of socio technological change

POST GRADUATE PROGRAMME OUTCOMES

PO1 Attain Competence in Discipline

PO2 Enable to develop Interdisciplinarity

PO3 Encourage Research Aptitude

PO4 Pertain Ethical Principles and entrust to Professional Ethics and responsibilities

PO5 Incorporate Self-directed and Life-long Learning

PO6 Cater Contemporary and Up-to-date Knowledge

PO7 Integrate Setting Goals

DEPARTMENT OF ENGLISH

Programme Specific Outcomes (PSOs) – B. A. Functional English Programme

	Programme specific outcomes
PSO1	To help learners gain better listening, speaking, reading and writing skills so that they can express themselves fluently in personal and professional contexts.
PSO2	To develop critical thinking ability and sensibility towards social, economic and societal situations by reading the texts from various genres of literatures.
PSO3	To get an awareness of the basic concepts and theoretical frameworks of Creative Writing, Translation Studies, Film Studies, Theatre for Communication, Advertising, Business English, Linguistics, English and Communication Technology and to develop research aptitude by learning literary and cultural theories
PSO4	To help learners to improve their proficiency in applying various skills in their personal and professional lives thereby enhancing their employability prospects.

COMMON COURSES: COURSE OUTCOMES

Semester	Course Code	Course Name	Course Outcomes
I	A01	Transactions: Essential English Language Skills	• Learners get a general awareness of pronunciation, vocabulary and grammar of English Language and acquire essential LSRW skills needed for academic transactions, discussions presentation and debating.
	A02	Ways with Words: Literatures in English	• Learners get acquainted with some of the landmark texts — poems, short stories and prose writings — from different literatures of English all over the world and get enlightened by the experience of reading them.
II	A03	Writing for Academic & Professional Success	• Learners learn to develop writing skills and integrate writing and thought, to acquire the correct sense of format, syntax, grammar, punctuation and spelling along with the concepts, principles and vocabulary of reasoning and argumentation and use analysis, synthesis and evaluation of advance arguments.

	A04	Zeitgeist: Readings on Society and Culture	• Learners are familiarized with some of the renowned writings related to the Indian Constitution and Secularism, Sustainable Environment, Gender and Human Rights to become socially committed citizens.
III	A05	Signatures: Expressing the Self	• Learners are introduced to an interesting collection of personal narratives of the world-renowned personalities which includes autobiographical writings, memoirs, speeches, testimonies, diaries and letters that enable them to understand "how personal narratives interest with the larger social realities" and to realize that personal narratives are not about individual stories, but encompass the collective self.
IV	A06	Spectrum: Literature and Contemporary Issues	• Learners become aware of the humanist dimensions of literature and media in the contemporary world enabling them to understand concepts like globalization, commercialization, intellectual property rights through literature, inculcating the spirit of universal brotherhood by presenting critiques of race, xenophobia, war and national borders and disseminating knowledge about the rights of minorities such as children, animals and the disabled and thus creating a positive change in the societal perception of them.

CORE, COMPLEMENTARY AND OPEN COURSES: COURSE OUTCOMES

Semester	Course Code	Course Name	Course outcomes
I	FEN1B01	Core Course-I: Communication Skills in English	• Learners improve their ability to express themselves in English in formal and informal situations.
	FEN1(2)CO1	Complementary Course-I Literatures in English: From Chaucer to the Present	• Learners become familiar with the various movements and ages in English literature, get acquainted with the great classics in English literature and get enlightened by the experience of reading great works of literature.
II	FEN2B02	Core Course-II Advanced English Grammar	• Learners get exposed to the advanced level of grammatical patterns and usages in English and improve their skills to speak and write English accurately.

	FEN1(2)CO2	Complementary Course-II Cultural Studies: Perspectives in Culture	• Learners are able to discover the contours of Cultural Studies as a field of inquiry, situating their learning within explorations of the disciplinary and historical context of the field andto use interdisciplinary critical perspectives to examine the diverse and sometimes contested meanings of cultural objects and processes, establishing a basic knowledge of the theoretical paradigms of Cultural Studies.
III	FEN3B03	Core Course- III Language and Technology	• Learners get skills in using the internet as a potential tool for language learning and acquire skills to use smartphones for better communicative mastery in English.
	FEN3B04	Core Course IV Applied Phonetics	• Learners are able to identify distinctive English sounds, its production and the varied phonetic symbols and to handle the target language effectively in an internationallyacceptable manner.
	FEN4(3)CO1	Complementary Course III- Literatures in English: American and Postcolonial	• Learners get acquainted with some of the landmark texts of American Literature through the ages and a general understanding of the variety of postcolonial writings and the diverse voices that constitute postcolonial identity.
IV	FEN4B05	Core Course V Fundamentals of Linguistics	• Learners understand the relationship between linguistics and related disciplines, to use linguistics as a tool in understanding and processing written or spoken text and acquire better communication and analytical abilities in English.
	FEN4B06	Core Course VI Business English	• Learners get a comprehensive idea about business correspondence, develop ability to prepare business letters, business reports, technical proposal and the like which in turn, develop their employability skills.
	FEN4(3)CO2	Complementary Course-IV Cultural Studies: Cultural Spaces	• Learners are able to connect cultural knowledge to everyday life and practices, gaining a preliminary understanding of the relationship of methodology (paradigms for study) to inquiry in Cultural Studies.

V	FEN5B07	Core Course VII Translation Studies	• Learners have an overall view of basic theories of translation and acquire the skill in translating various kinds of texts.
	FEN5B08	Core Course VIII Print Media	• Learners get knowledge of the history of the media, acquire functional knowledge of the fundamentals of media writing and develop the skill by practice of writing editorials, features, reviews and the like.
	FEN5B09	Core Course IX Theatre For Communication	• Learners become familiar with the theories related to drama and theatre, both eastern and western from Bharata and Aristotle to modern theatre and able to understand and analyse plays.
	FEN5B10	Core Course X Contemporary Literary Theory	• Learners gain a basic understanding of the 20th century Literary Theories and Critical Approaches which in turn enhance the taste of research in them.
	FEN5D02	Open Course: Language ForAdvertising: Theory & Practice	• Learners get an understanding of the techniques and procedures involved in advertisement production and to analyse advertisements in terms of creativity and execution.
VI	FEN6B11	Core Course-XI English Language Teaching	• Learners are able to teach basic English language components in an effective way, to understand and achieve the rudimentary skills for being a successful English teacher, to realize the roles of a teacher/learner in making the process of teaching interactive and outcome-based and to acquire better presentation and communication abilities in English.
	FEN6B12	Core Course XII Electronic Media	• Learners get familiarized with the fundamentals of electronic media and a basic knowledge of the fundamentals of writing for the electronic media.
	FEN6B13	Core Course-XIII Creative Writing	• Learners learn how to identify and appreciate various writing styles, to develop abilities to critically reflect on other's writings from different angles and acquire skills to prune their writing skills and analytical skills.
	FEN6B14	Core Course XIV Film Studies	• Learners develop skills to appreciate film as an art form and its aesthetics, get an understanding of visual aesthetics, forms and technological innovation and develop skills to connect films with history,

			politics, technology, psychology and performance.
	FEN6B15	Core Course XV Language for Advertising: Theory & Practice	• Learners are able to get a general awareness of the role of advertising andto examine the importance and use of creativity in advertising.
	FEN6B17	Project Work	• Learners get a space to express their talents and skills in creating their own artifact/product based on the knowledge and art they have acquired through their project works.

AUDIT COURSES

Semester	Course Code	Course Name	Course Outcomes
I	AUD1E01	Environment Studies	• Learners get familiarized with the fundamentals Environment Studies, concepts of sustainability a sustainable development, renewable and non-renewa resources, ecosystems, biodiversity and its conservati role of an individual in the prevention of environmen pollutions and environmental policies and practices become eco-friendly socially responsible individuals.
II	AUD2E02	Disaster Management	• Learners are able to get a general awareness of natural and man-made disasters, disaster prevention and mitigation and disaster preparedness and management.
III	AUD2E03	Human Rights	• Learners get an awareness of the concept of human rights: meaning, evolution and importance, UNO and human rights, Indian constitution and human rights and challenges to human rights to become socially responsible individuals.
IV	AUD2E04	Gender Studies	• Learners are able to define and utilize key concepts and terminology central to Gender Studies and analyze complex interconnections of gender, race, class, sexuality, ability, and other categories of power and identity in various spheres of human endeavor ranging from the sociopolitical to the aesthetic.

DEPARTMENT OF POLITICAL SCIENCE

Programmed Specific Outcomes (PSOs)–B.A Political Science Programme

1. Understand the political process, political thoughts and International relations
2. Understand the functioning of Indian state in a constitutional democracy
3. Application of different social theories and ideologies into socio-political context
4. Analyse the operation of selected international organizations and foreign policies of nation states
5. Examine the functions of three branches of government at national and regional levels
6. Examine the challenges to the Indian democracy

Course Outcomes

SEM	Course code	Course Name	Course outcomes
1	POL1B01	Foundations of Political Science	1. Understand meaning, scope and important approaches to the study of Political Science 2. Understand interconnection between State and Society, Elements of State and various theoretical perspectives about the origin and functioning of State. 3. Analyze input-output and structural-functional characteristics of State

			system. 4. Understand meaning and different kinds of Sovereignty and its nature in the context of globalization. 5. Understand the theory of Separation of Power. 6. Examine various structures of Government and their functions.
2	POL2B02	Concepts of Political Science	1. Understand the nuances of Law, Equality, Liberty, Justice, Rights, Duties, power, influence, Authority, and Legitimacy. 2. Analyze the Political Culture, Political Socialization, Political Modernization and Political Development. 3. Examine the working of Democracy and different forms of Democracy. 4. Analyze the role of political parties, interest groups, pressure groups, public opinion and propaganda. 5. Understand Globalization, Environmentalism and Feminism.
3	POL3B01	Indian Government and Politics	1. Understand the different

			Govt. of India Acts and functioning of Constituent Assembly 2. Understand the relevance and contents of preamble, Fundamental Rights, Fundamental Duties and Directive of State Policies in Indian constitution 3. Examine the Rights of Freedom and Minority Rights in Indian Constitution 4. Understand the composition and functions of Union and State Legislature and Executive 5. Analyze the functions of Local Self Governments and Speaker 6. Examine the operation of Judicial Review, Judicial Activism and Independence of Judiciary in India 7. Understand the composition and functioning of Finance Commission, Niti Ayog and Emergency Powers of constitution 8. Analysis of Centre-State relations in India.
3	POL3B02	World Constitutions: Comparative Analysis	1. **U**nderstand the nature and

			scope of Comparative Politics 2. Examine the distinction between traditional and modern comparative politics 3. Understand the difference between the term constitution and constitutionalism 4. Analyse the features of the Constitutions of the UK, USA, France, Switzerland and China. 5. Analyse the features of executive, Judiciary and Legislature of UK, USA, France. 6. Compare federal systems of USA, INDA and Switzerland and unitary systems of UK, France and China
4	POL4B01	Ancient and Medieval Political Thought	1. Understand the importance of ancient and medieval political thought 2. Recall the basic ideas of great Political philosophers 3. Examine the contemporary relevance of ancient and medieval political thought 4. Understand the contributions of Indian Political Thought 5. Analyse and Compare

			different streams of ancient and medieval political thought 6. Explain the views of St. Thomas Aquinas on Law and Justice 7. Differentiate textual and contextual methods in political thought 8. Critically examine and Apply thoughts of different political thinkers for the better understanding of present day politics. 9. Analyse and evaluate the medieval political ideas critically
4	POL4BO2	Issues in Indian Politics	1. Understand the structure and operations of caste, class and religion in Indian context 2. Understand the trends of party system in India 3. Analyse the structure, functions and support base of national and regional political parties 4. Examine the relevance and major challenges to secularism in India 5. Analysis of major trends in Indian democracy

			6. Understand the issues of dalits, tribes and women in India
5	POL5B01	Research Methodology	1. Understand the scientific methods to do a social science research 2. Application of different types of research methods 3. Understand different types of research designs 4. Application of different types of sampling methods 5. Understand different types of data collection 6. Understand the format of report writing
5	POL5B02	Modern Western Political Thought	1. Understand the essential background to modern Western Political Thought and its origins in the middle of the last millennium 2. Evaluate Machiavelli as a modern political thinker. 3. Analyse how the modern concept of secular state has emerged 4. List out the modern political thinkers and their contributions in Modern political thought

			5. Classify and compare thoughts of different modern political thinkers and assesses the contemporary relevance of these thinkers 6. Compare the ideas of Hobbes, Locke and Rousseau. 7. Examine the idealist thought in modern political philosophy 8. Categorize different thinkers in liberal, Idealist and Marxian tradition.
5	POL5B03	Society and Political Process in Kerala	1. Examine the Caste and Class structure in 19th and 20th century Kerala. 2. Understand Role of Missionaries, Social reforms, Reforms movements and rise of Representative Institutions in Kerala. 3. Understand the genesis of social and Political Activism like various Memorials, movement and development of National Movement. 4. Evaluate the role of social reform movements in the making of Kerala 5. Examine the political party

			structure in Kerala. 6. Analyse the working of Panchayathi Raj institutions in Kerala. 7. Evaluate the Kerala economy and Kerala model of development
5	POL5B04	Introduction to International Politics	1. Understand scope, importance and various approaches to the study of International Politics. 2. Understand Westphalian of State System. 3. Analysis of Imperialism, Colonialism and Cold War 4. Analyze power, National Power and elements of National Power. 5. Understand Balance of Power, Collective Security, Pacific Settlement of Disputes and International Law. 6. Evaluate the practice of Diplomacy in the post-Cold war period. 7. Analyze determinants of Foreign Policy.
6	POL6B01	Modern Indian Political Thought	1. Understand the major ideas propounded by the Raja Ram Mohan Roy, Jyothirao Phule,

			Vivekanda and Pandita Ramabhai 2. Analysis of nationalism and religion in Indian context through the writings of V D Savrkar, Mohammed Ali Jinnah and Rabindranath Tagore. 3. Understand the Gandhian concepts of Sathyagraha, Nonviolence Hind Swaraj and Swadeshi Trusteeship. 4. Analyse the Nehruvian Socialism, Secularism and Development 5. Understand the concepts of Radical Humanism, Socialism and Total Revolution of selected socialist thinkers 6. Examine the views of Sree Narayana Guru, B R Ambedkar and E V Ramaswamy on Social Justice
6	POL6B02	India's Foreign Policy	1. Understanding the principles, objectives and basic determinants of India's Foreign Policy 2. Analyze India's Relations with Pakistan, Bangladesh,

			Sri Lanka, Nepal, USA, Russia and China 3. Analyze India's Engagements with ASEAN, SAARC and EU 4. Evaluate Non-Alignment Policy, India's Nuclear Policy, India's Role in the UN and India and Climate Change Negotiations
6	POL6B03	Issues in International Politics	1. Analyse Post-Cold War International Politics including, the nature of contemporary international system and the roles of USA, China and India 2. Understand Clash of Civilizations Debate 3. Analyse the functions of European Union, ASEAN and other Non-State Actors in International Politics 4. Evaluate the features of Globalization, International Terrorism, Disarmament, Environmental Issues, Global Resistances, Refugees 5. Understand the Structure and Functions of United Nations 6. Evaluate the restructuring of the UN Security Council

6	POL6B04	Introduction to Public Administration	1. Understand the different theories of Administration. 2. Understand the differences between the Rule of Law and Administrative Law 3. Examine the various Principles of Organisation 4. Understand the Development Administration by analysing with different models. 5. Compare different models of Personal Administration 6. Examine the functions of Bureaucracy
6	POL6 B 07	International Organisation and Administration	1. Understand the Structure, Achievements and Failure of the League of Nations 2. Understand the purposes, principles, structure and functions of the United Nations and specialized agencies 3. Examine the Restructuring of the UN Security Council 4. Examine Peacekeeping Operations, Collective Security measures and Disarmament under the United Nations 5. Understand regional

			organizations and international financial organizations 6. Analyse the concepts of Terrorism, Climate Change, Migration, Refugees, Poverty and Inequality
5	POL5 D02	Human Rights in India	1. Understand the concept and evolution of Human Rights and its important approaches 2. Understand the different mechanisms of United Nations to ensure and protect the Human Rights 3. Understand the different constitutional provisions and legislations to protect human rights in India 4. Examine the functions of NHRC, Judiciary and PIL for protecting Human Rights In India 5. Examine the challenges to human rights of different vulnerable sections

PART A

	Semester	Course code	Course/topic name related

Employability			
Entrepreneurship			
Skill Development			
Professional Ethics	5	POL5B01	Plagiarism
Gender	5,6,4	POL5BO3, POL6BO1 POL5 D02 POL4BO2	Marginalized groups and Social movements Pandita Ramabhai : Emancipation of Women Atrocities against women Marginalised Sections
Human Values	5	POL5 D02	Human Rights in India
Environment	5,2,6	POL5BO3 POL2BO2 POL6BO3	Environmental Movements in Kerala – Silent Valley and Plachimada Environmentalism Environmental Issues: Climatic change, Global warming
Sustainability	5	POL5BO3	Environmental Movements in Kerala – Silent Valley and Plachimada

DEPARTMENT OF SOCIOLOGY
Programme Specific Outcome:- BA Sociology

• PS01: Getting an exposure to the fundamental concepts and theories in acquiring skills for sociological imagination
• PS02: Achieve critical sensibility towards social, economic and political situation and to develop critical thinking ability
• PS03: Exhibit oral and written communication skills in disseminating sociological knowledge

- PS04: Improve proficiency in applying sociology and enhance employability
  Broadly, three orientations can be delineated with reference to the teaching of sociology
  - ➢ Social orientation (as in responsible citizenship education)
  - ➢ Knowledge orientation (as in personality and skill development),
  - ➢ Job orientation (as in vocational courses)

- PS05: Keeping these orientations in mind, the Board of Studies emphasizes the following as objectives of sociology education:
  - ➢ [a] to equip the students to critically understand and interpret social reality
  - ➢ [b] to generate in students a distinct sociological perspective on socioeconomic and cultural
  - ➢ reality
  - ➢ [c] to enhance the social sensitivity and sensibility of the students
  - ➢ [d] to help students acquire skills that will be useful to them in their personal and professional life.

- PS06: It is of the view that assessment should support and encourage broad instructional goals such as basic knowledge of the discipline of sociology including phenomenology, theories, techniques, concepts and general principles, encouragement of students' attributes including curiosity, creativity and reasoned skepticism and understanding the link of sociology to other disciplines. With this in mind it aims to provide a firm foundation in every aspect of sociology and to explain the modern trends in sociology.

Course outcome

Semester	Course Code	Course Name	Course outcome
I	SGY1B01:	BASICS OF SOCIOLOGY	• C01: Comprehension of the uniqueness of the sociological imagination • C02: Recognizing the difference between sociology and commonsense • C03: Conceptualization of society in the abstract
			• C04: Understanding the relation between the individual and society • C05:Understanding the parts and processes within society

II	SGY2B02	INDIAN SOCIETY: STRUCTURE AND TRANSFORMATION	• C01: To develop a sociological perspective for understanding the dynamics of Indian Society • C02: To sensitive the changes occurred in the various institutions in Indian Society • C03: To aware the issues and challenges of contemporary society
III	SGY3B03	SOCIOLOGICAL THEORY: AN INTRODUCTION	• C01: To provide an understanding of the historical condition in which sociology originated and developed as an independent academic discipline . • C02: To understand the intellectual and philosophical foundations of Sociological theories and contributions of Classical theorists to Sociology
IV	SGY4B05	INTRODUCTION TO SOCIAL RESEARCH	• C01: To familiarise the nature and scope of social research • C02: To understand steps and methods of social research • C03: To distinguish the characteristics of qualitative and quantitative research
	SGY4B06	SOCIOLOGY OF KERALAM	• C01: Recollect the social and cultural history of Kerala society • C02: Understand the major social transformation in Kerala and its implications in present society • C03: Analyse the various socio cultural issues concerning Kerala society through sociological lens.
V	SGY5B07	SOCIAL ANTHROPOLOGY	• C01: Understanding the basic concepts of Anthropology
			• C02: Familiarize with Anthropological studies in India by focusing on Tribal Communities in the country in general and in the state of Kerala in particular

	SGY5B08	SOCIOLOGY OF RURAL AND URBAN SOCIETIES	• C01: Understanding major concepts and theoretical perspectives in urban sociology Familiarizing the views on urban social life • C02: Understanding the nature of urbanisation process in Indian context • C03: Perceiving the urbanisation process as a spatial transformation with a focus on Kerala scenario • C04: Achieve critical sensibility towards social, economic and political dimensions involved in decentralized governance in Kerala and their impact on land use pattern.
	SGY5B09	WOMEN IN CONTEMPORARY SOCIETY	• C01: Understanding some major themes in gender knowledge • C02: Conceptual clarity regarding women's studies and feminism • C03: Grasp on structural issues faced by women • C04: Knowledge about factors affecting the status of women in Kerala over time • C05: Critical awareness regarding women empowerment in Kerala
	SGY5B10	ENVIRONMENT AND SOCIETY	• C01: Learn the principles and major areas in the areas of sociology of environment. • C02: Understand the relationship between environment and human society. • C03: Comprehend the necessities of having environmental awareness.
			• C04: Gain awareness of the various environmental issues confronting in our immediate surroundings.
	SGY5&6B:	PROJECT WORK	

VI	SGY6B11	INVITATION TO SOCIOLOGICAL THEORY	• C01: Traces the transformation from social thought to Sociological theory • C02: Identifies the basic components of theory • C03: Develops a sociological thinking • C04: Recognizes the paradigmatic orientations in Sociology • C05: Evaluates Sociology as a humanistic discipline
	SGY6B12	SOCIAL PSYCHOLOGY	• C01: Understanding of basic concepts in social psychology • C02: Understanding the basic psychological Process • C03: Aware the significance of attitude in developing social behavior • C04: Basic understanding on personality and its relation with social system
	SGY6B13	POPULATION STUDIES	• C01: To provide a basic theoretical explanation of population studies and related concepts. • C02: To provide critical analysis of the population theories • C03: To analyse the changes in population in society
	SGY6B14	POLITICAL SOCIOLOGY	• C04: Familiarizing the theoretical and conceptual discussions on Power and Politics • C05: Understanding the dynamics of Power • C06: Critically evaluating the political process in India

	SGY6 B15	LIFE SKILL EDUCATION (ELECTIVE CORE COURSE FOR SINGLE CORE/SDE)	• C01: To provide with the knowledge of necessary life skill for the application in everyday life • C02: To enhance the quality of addressing issue relevant to the life situations • C03: To enable the students to establish productive interpersonal relationships with others • C04: To equip students for handling specific issues

DEPARTMENT OF BUSINESS ADMINISTRATION

Programme Specific Outcomes (PSOs) – Bachelor of Business Administration

	Programme specific outcomes
PSO1	Critical Thinking Skills: Students are able to define, analyze, and devise solutions for structured and unstructured business problems and issues using cohesive and logical reasoning patterns for evaluating information, materials, and data.
PSO2	Communication Skills: Students are able to conceptualize a complex issue into a coherent written statement and oral presentation.
PSO3	Technology Skills: Students are competent in the uses of technology in modern organizational operations.
PSO4	Entrepreneurship and Innovation: Students can demonstrate the fundamentals of creating and managing innovation, new business development, and high-growth potential entities.
PSO5	Business Knowledge: Students can demonstrate technical competence in domestic and global business through the study of major disciplines within the fields of business.

Course Outcomes

New syllabus (2019 onwards)

Semester	Course Code	Course Name	Course outcomes
I	BBA1B01	Management theory and practices	• CO1:Discuss different schools of management thought
			• CO2:Understand apply the concepts of planning, organizing, staffing and controlling for effective • management
			• CO3:Aware and apply the ethically and socially responsible behaviour in Management

			• CO4:Aware and pursue the modern management practices in business
I	BBA1C01	Managerial Economics	• CO1:Acquire knowledge regarding relevant economic concepts applicable in managerial decisions
			• CO2:Design competition strategies, including costing, pricing, product differentiation and market environment according to the natures of products and the structures of the markets

Name of Programme: B.Com. Finance

POs		**COs**
PO-1	The students will get new ideas, insights and thoughts. The mindset of students will change. They get new ideas and practical experience. Such students can face challenges with confidence and succeed in life.	**BCM1B01: BUSINESS MANAGEMENT** **Course Outcome:** • To understand the management concepts and to learn concepts in real life businesses. • To understand the concept of Managerial functions and realise the importance of Leadership and Management. • To transform the business concept of an Individual firm from an indigenous perspective to a global perspective and realise the importance of business ethics in real life situation. • To realise the growing importance of corporate social responsibility in the present era and examine how this concept help the business to fulfil its responsibilities towards society. • To transform the limited idea about management to a more comprehensive and holistic concept and understand about the most sophisticated concepts and techniques in Management in various countries. **BCM1C01: MANAGERIAL ECONOMICS** **Course outcome:** • Understand Macro & Micro economics & its role in managerial decision making.
PO-2	The students will be thorough with the procedures and formalities of establishment and management of business units. As all aspects are well debated, it will be easy for them to establish and successfully run business units.	
PO-3	The students will be conversant with the various accounting principles and practices. All will be capable of recording, generating financial reports and arriving at conclusions and predictions.	
PO-4	The inter-disciplinary approach will help students to solve business issues easily and will emerge as successful entrepreneurs in future.	
PO-5	The multidisciplinary in-depth learning across all related topics of business and industry will definitely pave a strong foundation for higher learning in commerce	

	and management	• Understand the concept of law of diminishing marginal utility theory. • Understand the structure and importance of different types of markets. • Understand the role played by government in regulating Indian economy • Understand a conceptual knowledge regarding India's foreign trade and the application of this knowledge in securing business opportunities. **BCM2B02: FINANCIAL ACCOUNTING** **Course outcome:** • Students learn to prepare accounts even from incomplete information. • The learner learns to prepare Company accounts • Understands the concept of debentures and learns to account for debentures. • Understand the application of IFRS in Companies • Critically learns 'AS' and IFRS. **BCM2C02 : MARKETING MANAGEMENT** **Course Outcome:** • The learner understands the core marketing concepts and consumer buying behaviour • The Scholar learns the concept of creating and capturing value. • Understand the concept of marketing channels in the competitive environment. • Learns to enrich the firm's competitive strength. • Understand and develop an idea about the latest trends in e-commerce and e-marketing. **BCM3A11: BASIC NUMERICAL METHODS** **Course Outcome:** • The learner learns the concepts of equations and quadratic formula. • Facilitates the scholar to use matrices for large volume data
PO-6	In depth understanding of management principles will help to create managerial aptitude and skills in students will foster successful managers for future.	
PO-7	In depth understanding of Accounting principles and practices coupled with interdisciplinary learning will help to create newer ideas in accounting and will bring in innovative and creative professionals in Finance, Cost and Management.	
PO-8	The knowledge of direct and indirect taxation will open up a new area of living by students. Information on both direct and indirect taxation systems will cut open a wider area of employment and professionalism.	
PO-9	The improved communication skills and basic understanding of laws in force of the country will definitely add to the content level and level of interaction by students.	
PO-10	Students become more confident, self-reliant, competent and Competitive with practical insights and thorough learning.	

		processing. • This helps to solve problems involving arithmetic and geometric progressions. • Able to choose the right mode of interest and EMI for debt repayment • Develop the skill of using descriptive statistical tools. **BCM3A12: PROFESSIONAL BUSINESS SKILLS** **Course Outcome:** • Facilitates easy business communication • Improved knowledge of E-learning resources and its delivery broadens vision and insight of management. • Knowledge of artificial intelligence and data analysis helps to diversify and grow business cutting across obstacles • Knowledge of existing national and international cyber laws makes communication and business easier. • Digital marketing and its application of social media channels and advertisements enhances changes and horizon of business. **BCM3BO3: BUSINESS REGULATIONS** **Course Outcome:** • Helps to establish and run business as directed by the government. • Knowledge of Indian Contract Act 1872 helps to enter into valid contracts in life and business. • Learning of Sale of Goods Act helps to do business keeping all legal formalities. • Understanding of the privileges and rights of consumers helps to do legally standing business admitting the status of the customers; increases business and relationships in the long run. • Able to create LLP business with sound legal knowledge. **BCM3BO4: CORPORATE ACCOUNTING** **Course Outcome:**

		• Becomes competent to prepare accounts related with redemption of preference shares, bonus shares, right issue of shares and buy back of shares. • Realizes the concept of preparation of final accounts of banking companies. • Develop the skill of preparation of final accounts of life insurance companies. • Able to prepare the final accounts of group companies. • Understand the concept of disclosure based accounting standard and interim reporting. **BCM3C03: HUMAN RESOURCES MANAGEMENT** **Course Outcome:** • Knowledge of human resource management helps to run business effectively. • Understand the necessary skills required for the employment in an organization. • Familiarity with the induction and organizational training practices helps to have effective trained work force in the organisation. • Understand the concept of career planning and performance appraisal. • Insight on compensation and grievance management practices helps to take effective and appropriate decisions on time. **BCM4A13: ENTREPRENEURSHIP DEVELOPMENT** **Course Outcome:** • It motivates the learner to become an entrepreneur • Knowledge of supports available helps to reap the benefits of easily • It is intended to trigger the mind set of youth to establish and run MSMEs in life • Knowledge of establishing industrial units helps to start with business units easily. • The learner can draft and finalise project report without

		external helps and supports. **BCM4A14: BANKING AND INSURANCE** **Course Outcome:** • Candidates get clear picture of the banking business India and he can plan accordingly. • Knowledge of negotiable instruments, features & formalities helps to deal with care. • This helps the candidate to be up-to-date in banking formalities and fund transfer. • Knowledge of insurance business helps to hedge, avoid, and reduce risk in business. • Knowledge of LIC and IRDA helps to move with Insurance people with confidence. **BCM4B05: COST ACCOUNTING** **Course Outcome:** • The learner gets insights into the costing and cost accounting tools and techniques. • The learner understands the scientific material cost control measures in use. • The scholar gets used to the scientific labour and overhead cost control measures. • Knowledge of various methods of costing helps the learner to practice in life. • Variance analysis helps to identify its causes and take corrective actions. **BCM4BO6: CORPORATE REGULATIONS** **Course Outcome:** • Knowledge of Indian Companies Act gives the legislative backgrounds of a company. • The candidate knows the formalities for formation of a company which will help to form more corporates in life. • The knowledge of raising funds will help the candidate to choose between debt and equity easily • The candidate can easily manage a company as he knows

		the rights, duties and powers of all positions. • Knowledge of situations when a company may go for liquidation helps to run the business effectively. **BCM4C04: QUANTITATIVE TECHNIQUES FOR BUSINESS** **Course Outcome:** • Knowledge of QT broadens vision and outlook of the candidate to face business problems. • Understanding of correlation and regression analysis helps to predict with greater degree of accuracy. • Awareness of probability and other theories helps to have critical thinking and rational decisions. • Familiarity with theoretical distributions helps to correlate issues with standard theories and take decisions. • Knowledge of LPP and modeling will be of great help in decision making. **BCM5B07: ACCOUNTING FOR MANAGEMENT** **Course Outcomes:** • To make the learner aware of the methodologies of Management Accounting • It is to make the candidate learn how to conceive and interpret financial statements • Ratios are very helpful tools for analysis and interpretations. • Knowledge of movements in working capital helps to check/control flow of funds/cash. • Knowledge of CVP analysis will be of great help for managerial decision making. **BCM5B08: BUSINESS RESEARCH METHODS** **Course Outcome:** • The learner knows the primary matters of business research • The student know how to fix a research design, scaling checking validity etc. • The candidate knows the method of data collection and its

		processing and validation. • The learner knows to process collected data, test hypothesis and arrive at conclusions • The student knows well how to write an academic report and present it **BCM5B09: INCOMETAX LAW AND ACCOUNTS** **Course Outcome:** • To understand the method and methodology of taxation on income in India. • To learn the provisions related to computation of Taxable Salary Income. • Knowledge of taxing income from house property helps the learner to compute taxable income under the head House Property correctly. • Knowledge of computing income under the head profits and gains of business or profession helps the learner to do it effectively in life. • Knowledge of computing income under the head Capital Gains and other sources makes the learner self-confident and competent to practice income tax. **BC6B12: INCOME TAX & GST** **Course Outcome:** • Students will be able to compute tax liability of individuals • The Learner can do filing of returns of income meeting statutory obligations • The scholars understand the concept of GST and e-filing procedures • The candidates understand the offences and penalties under the Acts. • The Learner learns the rights, duties and powers of CAG and tax authorities. **BCM6B13: AUDITING AND CORPORATE GOVERNANCE** **Course Outcome:** • Knowledge of auditing helps gives newer insights and wide

		vision on the topic. • Learns to do verification, vouching and valuation independently. • Knows to set internal control system effectively to check frauds, errors and omissions. • Solid understanding of the models and benefits of corporate governance. • Evaluate different stakeholders' roles and significance in corporate governance. **BCM5B10: FINANCIAL MARKETS AND SERVICES** **Course Outcome:** • The; learner acquires thorough knowledge about the financial markets and products available • The scholar understands Indian Money Market, Players in the market, Instruments traded, and their functions. • The candidate gets clear idea of the composition Indian Capital Market, Who all are the major players in it, how indices are constructed and major indices in use. This will help the candidate to enter such a market with confidence. • The Student get acquainted with various NBFCs in playing in India, major instruments traded in the country, factoring, leasing etc. • The scholar gets clear idea of the regulatory mechanism in India and role of RBI and SEBI in enforcing transparent fair dealings. This will help the candidate to master the topic easily with confidence. **BCM5B11: FINANCIAL MANAGEMENT** **Course Outcome:** • Knowledge of financial management and time of value money helps decisions making effective. • Understanding of capital investment evaluation techniques makes investment selection easier. • Familiarity with cost of capital helps to use capital judiciously • Knowledge of dividend policies helps to take appropriate decision on dividend • Helps to have effective working capital management. **BCM6B14: FUNDAMENTALS OF INVESTMENT**

		Course Outcome: • Develops a broad understanding of the concept of investment management • Learn security valuation of bonds, preference shares and equity shares • Study calculation of return on investment and expected return through examples • Understand analysis of securities, approaches, tools, stock charts, patterns and theories • Understands portfolio management, analysis and redress issues easily. **BCM6B15: FINANCIAL DERIVATIVES** **Course Outcome:** • This helps to master capital market segment and derivatives market • This develops knowledge on derivatives trading and its legal framework • It helps to differentiate between various types of derivatives. • Understand the trading strategies adopted on option trading • It helps to learn forwards, futures, and swaps.

Name of Programme: **B.Com. Co-operation**

POs	**COs**

PO-1	The students will get new ideas, insights and thoughts. The mindset of students will change. They get new ideas and practical experience. Such students can face challenges with confidence and succeed in life.	**BCM1B01: BUSINESS MANAGEMENT** **Course Outcome:** • To understand the management concepts and to learn concepts in real life businesses. • To understand the concept of Managerial functions and realise the importance of Leadership and Management. • To transform the business concept of an Individual firm from an indigenous perspective to a global perspective and realise the importance of business ethics in real life situation. • To realise the growing importance of corporate social responsibility in the present era and examine how this concept help the business to fulfil its responsibilities towards society. • To transform the limited idea about management to a more comprehensive and holistic concept and understand about the most sophisticated concepts and techniques in Management in various countries. **BCM1C01: MANAGERIAL ECONOMICS** **Course outcome:** • Understand Macro & Micro economics & its role in managerial decision making. • Understand the concept of law of diminishing marginal utility theory. • Understand the structure and importance of different types of markets. • Understand the role played by government in regulating Indian economy • Understand a conceptual knowledge regarding India's foreign trade and the application of this knowledge in securing business opportunities. **BCM2B02: FINANCIAL ACCOUNTING** **Course outcome:** • Students learn to prepare accounts even from incomplete information. • The learner learns to prepare Company accounts • Understands the concept of debentures and learns to account for debentures.
PO-2	The students will be thorough with the procedures and formalities of establishment and management of business units. As all aspects are well debated, it will be easy for them to establish and successfully run business units.	
PO-3	The students will be conversant with the various accounting principles and practices. All will be capable of recording, generating financial reports and arriving at conclusions and predictions.	
PO-4	The inter-disciplinary approach will help students to solve business issues easily and will emerge as successful entrepreneurs in future.	
PO-5	The multidisciplinary in-depth learning across all related topics of business and industry will definitely pave a strong foundation for higher learning in commerce and management	
PO-6	In depth understanding of management principles will help to create managerial aptitude and skills in students will foster successful managers for future.	
PO-7	In depth understanding of Accounting principles and practices coupled with interdisciplinary learning will help to create newer ideas in accounting and will bring in innovative and creative professionals in Finance, Cost and Management.	
PO-8	The knowledge of direct and indirect taxation will open up a new area of living by students. Information on both direct and indirect taxation systems will cut open a wider area of employment	

	and professionalism.	• Understand the application of IFRS in Companies • Critically learns 'AS' and IFRS. **BCM2C02 : MARKETING MANAGEMENT** **Course Outcome:** • The learner understands the core marketing concepts and consumer buying behaviour • The Scholar learns the concept of creating and capturing value. • Understand the concept of marketing channels in the competitive environment. • Learns to enrich the firm's competitive strength. • Understand and develop an idea about the latest trends in e-commerce and e-marketing. **BCM3A11: BASIC NUMERICAL METHODS** **Course Outcome:** • The learner learns the concepts of equations and quadratic formula. • Facilitates the scholar to use matrices for large volume data processing. • This helps to solve problems involving arithmetic and geometric progressions. • Able to choose the right mode of interest and EMI for debt repayment • Develop the skill of using descriptive statistical tools. **BCM3A12: PROFESSIONAL BUSINESS SKILLS** **Course Outcome:** • Facilitates easy business communication • Improved knowledge of E-learning resources and its delivery broadens vision and insight of management. • Knowledge of artificial intelligence and data analysis helps to diversify and grow business cutting across obstacles • Knowledge of existing national and international cyber laws
PO-9	The improved communication skills and basic understanding of laws in force of the country will definitely add to the content level and level of interaction by students.	
PO-10	Students become more confident, self-reliant, competent and Competitive with practical insights and thorough learning.	

		makes communication and business easier. • Digital marketing and its application of social media channels and advertisements enhances changes and horizon of business. **BCM3BO3: BUSINESS REGULATIONS** **Course Outcome:** • Helps to establish and run business as directed by the government. • Knowledge of Indian Contract Act 1872 helps to enter into valid contracts in life and business. • Learning of Sale of Goods Act helps to do business keeping all legal formalities. • Understanding of the privileges and rights of consumers helps to do legally standing business admitting the status of the customers; increases business and relationships in the long run. • Able to create LLP business with sound legal knowledge. **BCM3BO4: CORPORATE ACCOUNTING** **Course Outcome:** • Becomes competent to prepare accounts related with redemption of preference shares, bonus shares, right issue of shares and buy back of shares. • Realizes the concept of preparation of final accounts of banking companies. • Develop the skill of preparation of final accounts of life insurance companies. • Able to prepare the final accounts of group companies. • Understand the concept of disclosure based accounting standard and interim reporting. **BCM3C03: HUMAN RESOURCES MANAGEMENT** **Course Outcome:** • Knowledge of human resource management helps to run

		business effectively. • Understand the necessary skills required for the employment in an organization. • Familiarity with the induction and organizational training practices helps to have effective trained work force in the organisation. • Understand the concept of career planning and performance appraisal. • Insight on compensation and grievance management practices helps to take effective and appropriate decisions on time. **BCM4A13: ENTREPRENEURSHIP DEVELOPMENT** **Course Outcome:** • It motivates the learner to become an entrepreneur • Knowledge of supports available helps to reap the benefits of easily • It is intended to trigger the mind set of youth to establish and run MSMEs in life • Knowledge of establishing industrial units helps to start with business units easily. • The learner can draft and finalise project report without external helps and supports. **BCM4A14: BANKING AND INSURANCE** **Course Outcome:** • Candidates get clear picture of the banking business India and he can plan accordingly. • Knowledge of negotiable instruments, features & formalities helps to deal with care. • This helps the candidate to be up-to-date in banking formalities and fund transfer. • Knowledge of insurance business helps to hedge, avoid, and reduce risk in business. • Knowledge of LIC and IRDA helps to move with Insurance people with confidence. **BCM4B05: COST ACCOUNTING** **Course Outcome:**

- The learner gets insights into the costing and cost accounting tools and techniques.
- The learner understands the scientific material cost control measures in use.
- The scholar gets used to the scientific labour and overhead cost control measures.
- Knowledge of various methods of costing helps the learner to practice in life.
- Variance analysis helps to identify its causes and take corrective actions.

BCM4BO6: CORPORATE REGULATIONS

Course Outcome:

- Knowledge of Indian Companies Act gives the legislative backgrounds of a company.
- The candidate knows the formalities for formation of a company which will help to form more corporates in life.
- The knowledge of raising funds will help the candidate to choose between debt and equity easily
- The candidate can easily manage a company as he knows the rights, duties and powers of all positions.
- Knowledge of situations when a company may go for liquidation helps to run the business effectively.

BCM4C04: QUANTITATIVE TECHNIQUES FOR BUSINESS

Course Outcome:

- Knowledge of QT broadens vision and outlook of the candidate to face business problems.
- Understanding of correlation and regression analysis helps to predict with greater degree of accuracy.
- Awareness of probability and other theories helps to have critical thinking and rational decisions.
- Familiarity with theoretical distributions helps to correlate issues with standard theories and take decisions.
- Knowledge of LPP and modeling will be of great help in decision making.

		BCM5B07: ACCOUNTING FOR MANAGEMENT **Course Outcomes:** • To make the learner aware of the methodologies of Management Accounting • It is to make the candidate learn how to conceive and interpret financial statements • Ratios are very helpful tools for analysis and interpretations. • Knowledge of movements in working capital helps to check/control flow of funds/cash. • Knowledge of CVP analysis will be of great help for managerial decision making. **BCM5B08: BUSINESS RESEARCH METHODS** **Course Outcome:** • The learner knows the primary matters of business research • The student know how to fix a research design, scaling checking validity etc. • The candidate knows the method of data collection and its processing and validation. • The learner knows to process collected data, test hypothesis and arrive at conclusions • The student knows well how to write an academic report and present it **BCM5B09: INCOMETAX LAW AND ACCOUNTS** **Course Outcome:** • To understand the method and methodology of taxation on income in India. • To learn the provisions related to computation of Taxable Salary Income. • Knowledge of taxing income from house property helps the learner to compute taxable income under the head House Property correctly. • Knowledge of computing income under the head profits and gains of business or profession helps the learner to do it

		effectively in life. • Knowledge of computing income under the head Capital Gains and other sources makes the learner self-confident and competent to practice income tax. **BC6B12: INCOME TAX & GST** **Course Outcome:** • Students will be able to compute tax liability of individuals • The Learner can do filing of returns of income meeting statutory obligations • The scholars understand the concept of GST and e-filing procedures • The candidates understand the offences and penalties under the Acts. • The Learner learns the rights, duties and powers of CAG and tax authorities. **BCM6B13: AUDITING AND CORPORATE GOVERNANCE** **Course Outcome:** • Knowledge of auditing helps gives newer insights and wide vision on the topic. • Learns to do verification, vouching and valuation independently. • Knows to set internal control system effectively to check frauds, errors and omissions. • Solid understanding of the models and benefits of corporate governance. • Evaluate different stakeholders' roles and significance in corporate governance. **BCM5B10:CO-OPERATIVE THEORY AND PRACTICE** **Course Outcome:** • It helps to learn about cooperation, cooperative movement and its principles • It facilitates a comparative study of cooperation and other economic systems • It helps to learn cooperative training houses and methods of

		training. • Idea on different types of cooperatives helps to choose from as when needed. • History of successful business houses motivates to start new cooperative business houses. **BCM5B11: LEGAL ENVIRONMENT FOR CO-OPERATIVES** **Course Outcome:** • Knowledge of cooperative movement in India helps to form new cooperatives. • Knowledge of cooperative legislations helps to go by law and take valid decisions. • Learning of Kerala Cooperative Societies Act helps to run societies easily. • Administrative set up of Cooperatives helps to contact the right person at the right time. • Banking Regulation Act helps to have a comparative study of both the Acts. **BCM6B14: INTERNATIONAL CO-OPERATIVE MOVEMENT** **Course Outcome:** • Acquire knowledge about the cooperative movement in the world, • Understand the structure and aim of international alliances • Be aware about the significance of international organizations. • Impart knowledge on the inter-cooperative relations in the country. **BCM6B15: CO-OPERATIVE MANAGEMENT AND ADMINISTRATION** **Course Outcome:** • Understand the concepts and characteristics of cooperatives • Understand the functional and management aspects of cooperatives • Develop an insight about cooperative leadership • Equip students with preparation of documents and financial statements Develop skills do verification and valuation of

		assets and liabilities.

Name of Programme: B.Com. Computer Application

POs		**Cos**
PO-1	The students will get new ideas, insights and thoughts. The mindset of students will change. They get new ideas and practical experience. Such students can face challenges with confidence and succeed in life.	**BCM1B01: BUSINESS MANAGEMENT** **Course Outcome:** • To understand the management concepts and to learn concepts in real life businesses. • To understand the concept of Managerial functions and realise the importance of Leadership and Management. • To transform the business concept of an Individual firm from an indigenous perspective to a global perspective and realise the importance of business ethics in real life situation. • To realise the growing importance of corporate social responsibility in the present era and examine how this concept help the business to fulfil its responsibilities towards society. • To transform the limited idea about management to a more comprehensive and holistic concept and understand about the most sophisticated concepts and techniques in Management in various countries. **BCM1C01: MANAGERIAL ECONOMICS** **Course outcome:** • Understand Macro & Micro economics & its role in managerial decision making.
PO-2	The students will be thorough with the procedures and formalities of establishment and management of business units. As all aspects are well debated, it will be easy for them to establish and successfully run business units.	
PO-3	The students will be conversant with the various accounting principles and practices. All will be capable of recording, generating financial reports and arriving at conclusions and predictions.	
PO-4	The inter-disciplinary approach will help students to solve business issues easily and will emerge as successful entrepreneurs in future.	
PO-5	The multidisciplinary in-depth learning across all related topics of business and industry will definitely pave a strong foundation for higher learning in commerce	

	and management	• Understand the concept of law of diminishing marginal utility theory. • Understand the structure and importance of different types of markets. • Understand the role played by government in regulating Indian economy • Understand a conceptual knowledge regarding India's foreign trade and the application of this knowledge in securing business opportunities. **BCM2B02: FINANCIAL ACCOUNTING** **Course outcome:** • Students learn to prepare accounts even from incomplete information. • The learner learns to prepare Company accounts • Understands the concept of debentures and learns to account for debentures. • Understand the application of IFRS in Companies • Critically learns 'AS' and IFRS. **BCM2C02 : MARKETING MANAGEMENT** **Course Outcome:** • The learner understands the core marketing concepts and consumer buying behaviour • The Scholar learns the concept of creating and capturing value. • Understand the concept of marketing channels in the competitive environment. • Learns to enrich the firm's competitive strength. • Understand and develop an idea about the latest trends in e-commerce and e-marketing. **BCM3A11: BASIC NUMERICAL METHODS** **Course Outcome:** • The learner learns the concepts of equations and quadratic formula. • Facilitates the scholar to use matrices for large volume data
PO-6	In depth understanding of management principles will help to create managerial aptitude and skills in students will foster successful managers for future.	
PO-7	In depth understanding of Accounting principles and practices coupled with interdisciplinary learning will help to create newer ideas in accounting and will bring in innovative and creative professionals in Finance, Cost and Management.	
PO-8	The knowledge of direct and indirect taxation will open up a new area of living by students. Information on both direct and indirect taxation systems will cut open a wider area of employment and professionalism.	
PO-9	The improved communication skills and basic understanding of laws in force of the country will definitely add to the content level and level of interaction by students.	
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		processing. • This helps to solve problems involving arithmetic and geometric progressions. • Able to choose the right mode of interest and EMI for debt repayment • Develop the skill of using descriptive statistical tools. **BCM3A12: PROFESSIONAL BUSINESS SKILLS** **Course Outcome:** • Facilitates easy business communication • Improved knowledge of E-learning resources and its delivery broadens vision and insight of management. • Knowledge of artificial intelligence and data analysis helps to diversify and grow business cutting across obstacles • Knowledge of existing national and international cyber laws makes communication and business easier. • Digital marketing and its application of social media channels and advertisements enhances changes and horizon of business. **BCM3BO3: BUSINESS REGULATIONS** **Course Outcome:** • Helps to establish and run business as directed by the government. • Knowledge of Indian Contract Act 1872 helps to enter into valid contracts in life and business. • Learning of Sale of Goods Act helps to do business keeping all legal formalities. • Understanding of the privileges and rights of consumers helps to do legally standing business admitting the status of the customers; increases business and relationships in the long run. • Able to create LLP business with sound legal knowledge. **BCM3BO4: CORPORATE ACCOUNTING** **Course Outcome:**

		• Becomes competent to prepare accounts related with redemption of preference shares, bonus shares, right issue of shares and buy back of shares. • Realizes the concept of preparation of final accounts of banking companies. • Develop the skill of preparation of final accounts of life insurance companies. • Able to prepare the final accounts of group companies. • Understand the concept of disclosure based accounting standard and interim reporting. **BCM3C03: HUMAN RESOURCES MANAGEMENT** **Course Outcome:** • Knowledge of human resource management helps to run business effectively. • Understand the necessary skills required for the employment in an organization. • Familiarity with the induction and organizational training practices helps to have effective trained work force in the organisation. • Understand the concept of career planning and performance appraisal. • Insight on compensation and grievance management practices helps to take effective and appropriate decisions on time. **BCM4A13: ENTREPRENEURSHIP DEVELOPMENT** **Course Outcome:** • It motivates the learner to become an entrepreneur • Knowledge of supports available helps to reap the benefits of easily • It is intended to trigger the mind set of youth to establish and run MSMEs in life • Knowledge of establishing industrial units helps to start with business units easily. • The learner can draft and finalise project report without

		external helps and supports. **BCM4A14: BANKING AND INSURANCE** **Course Outcome:** • Candidates get clear picture of the banking business India and he can plan accordingly. • Knowledge of negotiable instruments, features & formalities helps to deal with care. • This helps the candidate to be up-to-date in banking formalities and fund transfer. • Knowledge of insurance business helps to hedge, avoid, and reduce risk in business. • Knowledge of LIC and IRDA helps to move with Insurance people with confidence. **BCM4B05: COST ACCOUNTING** **Course Outcome:** • The learner gets insights into the costing and cost accounting tools and techniques. • The learner understands the scientific material cost control measures in use. • The scholar gets used to the scientific labour and overhead cost control measures. • Knowledge of various methods of costing helps the learner to practice in life. • Variance analysis helps to identify its causes and take corrective actions. **BCM4BO6: CORPORATE REGULATIONS** **Course Outcome:** • Knowledge of Indian Companies Act gives the legislative backgrounds of a company. • The candidate knows the formalities for formation of a company which will help to form more corporates in life. • The knowledge of raising funds will help the candidate to choose between debt and equity easily • The candidate can easily manage a company as he knows

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		vision on the topic. • Learns to do verification, vouching and valuation independently. • Knows to set internal control system effectively to check frauds, errors and omissions. • Solid understanding of the models and benefits of corporate governance. • Evaluate different stakeholders' roles and significance in corporate governance. **BCM5B10: COMPUTER APPLICATIONS IN BUSINESS** **Course Outcome:** • Knowledge of networking and its application business helps students to learn in a networked community much easily. • Knowledge of website creation and its updation and maintenance magnifies the identity and scope of business at much cheaper a cost. • This helps to grow business across boarders easily. • Students become more competitive in this digital era for he knows these entire well. • Knowledge of the threats present in the Net helps to take preventive measures early and thereby could be avoided on time. **BCM5B11: BUSINESS INFORMATION SYSTEMS** **Course Outcome:** • Knowledge of MIS helps to gather, process and take decisions easily. • It helps to provide right information at the right time at the right quantity • Knowledge of DBMS helps to process data scientifically keeping all manifestations. • Understanding of ERP helps easy automation and results in reduced costs. • Business Process Reengineering results in increased dignity in business and profits **BCM6B14: OFFICE AUTOMATION TOOLS** **Course Outcome:** • Students understand how to prepare documents using MS-

		Word • Learner demonstrates excel spreadsheets and its applications. • The candidate knows Power Point Presentations and its use in business meetings. • Scholar acquires knowledge on distributed and client server computing. • Understand the applications of internet in the field of business education and governance. **BCM6B15 COMPUTERISED ACCOUNTING WITH TALLY** **Course Outcome:** • Helps to develop awareness on accounting concepts and principles • Aids to perform documentation, accounting and inventory operations using Tally • Assist preparation of financial statements, tax documents, budgets and presentations • Develop adequate knowledge on accounting information system and their application. • To excel in budgets, reporting and accounting using Tally.

			• CO3:Make optimal business decisions by integrating the concepts of economics
II	BBA2B02	Financial accounting	• CO1: Discuss and apply fundamental accounting concepts, principles and conventions
			• CO2:Record basic accounting transactions and prepare annual financial statements for a sole • proprietorship business
			• CO3:Record accounting transactions in respect of hire purchase and instalment system and branches
II	BBA2B03	Marketing management	• CO1: Understand and develop insights and knowledge base of various concepts that driving marketing strategies.
			• CO2:Develop skills in organizing for effective marketing and in implementing the market planning process
			• CO3:Evaluate the significance of marketing
			• CO4:Analyze the relationships between marketing management and the political, economic, legal and social policies and its impact on business.
			• CO5:Identify the role and significance of various elements of marketing mix.
			• CO6:To evaluate the role and relevance of marketing organization in current marketing conditions
			• CO6: Understanding the marketing concepts in global environment. and its relevance.
III	BBA3A11	Basic Numerical methods	• CO1:Acquire knowledge of numerical equations, matrices progressions, financial mathematics and descriptive statistics.
			• CO2:Do calculation of arithmetic mean, median and mode and partition values.

			• CO3:Understand correlation regression analysis and their applications.
			• CO4:Understand statistical testing and their applications.
III	BBA3A12	Professional business skills	• CO1:To update and expand basic Informatics skills of the students.
			• CO2:To equip the students to effectively utilize the digital knowledge resources for their study.
			• CO3: to understand the basics of Business Data Analysis
			• CO4:update about Socio_Cyber Informatics
III	BBA3B04	Corporate accounting	• CO1:The course acquaints the students with the knowledge about corporate accounting. The modules introduce the fundamental Indian accounting standard and equip the students with skills for preparing corporate accounts.
			• CO2:Understand and apply fundamental IndASs on inventories, PPE, provisions, income tax, borrowing cost and intangible assets
			• CO3:Prepare annual financial statements for companies and compute accounting ratios.
			• CO4:Record accounting transactions in respect of redemption of preference shares and debentures
III	BBA3B05	Financial management	• CO1:This course aims to enable students to understand the basic concepts of financial Management and make them aware of major decisional areas of financial management.
			• CO2:Understand and develop insights and knowledge base of various concepts of finance
			• CO3:Develop skills for effective Financial, Investment and Dividend decisions making

III	BBA3C02	Business regulations	• CO1:This course aims to familiarise the students with major statutes affecting the operations of business organizations.
			• CO2:Interpret statutory provisions related to business laws
			• CO3:Analyse legal issues arising in day-to-day business operations prevalent in India
			• CO4:Evaluate the core concepts in the legal structure of business organisations
			• CO5:Discuss possible solutions to issues in organisations in the frame work of business laws
IV	BBA4A13	Entrepreneurship Development	• C01:To familiarize the students with the concept of entrepreneurship.
			• CO2:To identify and develop the entrepreneurial talents of the students.
			• CO3:To generate innovative business ideas in the emerging industrial scenario.
			• CO4:Become aware of entrepreneurship opportunities available in the society for the entrepreneur.
			• CO5:Acquaint them with the challenges faced by the entrepreneur.
			• CO6:Develop the motivation to enhance entrepreneurial competency.
IV	BBA4A14	Banking and insurance	• CO1:To enable the students to acquire knowledge about basics of Banking and Insurance.
			• CO2:To familiarize the students with the modern trends in banking.
			• CO3:Have an exposure of the techniques & application of contemporary banking.
			• CO4:Understand the Structure of Indian Banking System.
			• CO5:Gain specialist legal knowledge and an understanding of

			the theoretical underpinnings of Insurance Law within a practical context, whilst developing expertise in these areas
			• CO6:Create valuable insights into the key principles and practices that regulate the insurance industry.
			• CO7:Provide knowledge about approaches to risk management and other essential issues.
IV	BBA4B06	Cost and Management accounting	• CO1:The objective of the course is to acquaint the students with the basic Concepts and tools of cost and Management Accounting
			• CO2:Understand cost and management accounting concepts and its application for decision making.
			• CO3:Aware as to cost consciousness and the various methods and techniques of costing
			• CO4:Analyse implications of cost in managerial decisions.
			• CO5:Prepare different budgets.
			• CO6:Understand Break Even concept.
			• CO7:Understand Standard costing and analysis of deviation.
IV	BBA4C04	Corporate regulations	• C01:To familiarise the students with corporate law and to make them aware of the applications of • importance of company law in the management of organisations.
			• C02:Understand the features and different types of companies
			• C03:Aware as to the formation of companies and also as to different documents of companies
			• C04:Understand the share capital and other relevant provisions of the same
			• C05:Understand the management, corporate governance, corporate social responsibility and some basic aspects of SEBI,

			• C06:Understand the provisions of conducting meetings and also the winding up procedure of companies.
IV	BBA4C05	Quantitative Techniques for Business	• C01: To familiarise student with the use quantitative techniques in managerial decision making.
			• C02:Understand and develop insights and knowledge base of various concepts of Quantitative Techniques.
			• C03:Develop skills for effectively analyse and apply Quantitative Techniques in decision making.
V	BBA5B07	Human resources management	• CO1:To give a conceptual understanding of human resource practices in organizations.
			• CO2:Understand and develop insights and knowledge base of various concepts and Functions of Human Resource Management
			• CO3: Learn the latest trends in Human Resource Management
V	BBA5B08	Business research methods	• CO1:To provide an insight into the fundamentals of business research and to acquire practical knowledge and required skills in carrying out research which they are expected to possess when they enter the industry as practitioners
			• CO2;Understand and develop insights and knowledge base of various concepts in Research.
			• CO3:Develop skills for conducting business research
			• CO3:Judge the reliability and validity of experiments and perform exploratory data analysis.
			• CO4:Use parametric and non-parametric hypothesis tests (and interpreting their results).
			• CO5:Use computer-intensive methods for data analysis.
V	BBA5B09	Operations Management	• CO1:To familiarize the students with theconcepts, tools and practices of operations management

			and to learn about the decisions and processes of operations management in a business firm.
			• CO2:Understand the different concepts of operation Management.
			• CO3:Acquire the knowledge to make plans at the operational level of an industry
			• CO4:Understand ever growing importance of Production and Operations management in uncertain business environment.
			• CO5:Gain an in-depth understanding resource utilization of an organization.
			• CO6:Appreciate the unique challenges faced by firms in services and manufacturing.
			• CO7:Develop skills to operate competitively in the current business scenario.
V	BBA5B10	Income tax	• CO1:To impart basic knowledge and equip students with application of principles and provisions of Income Tax Act, 1961 amended up-to-date.
			• CO2:On completing the course the students will be able to understand the latest provisions of Income Tax Act Law and as well as and
			• C03: enable to compute different heads of income
			• CO4:enable to compute Total income
			• CO5: enable to compute tax liability.
V	BBA5B11	Financial market and institutions	• CO1:To provide basic knowledge about the structure, organisation and working of financial system in India.
			• CO2:The course helps to understand different aspects and components of financial Institutions and financial markets.

			• CO3:This will enable the students to take rational decisions on financial market and institutions.
			• CO4:Identify roles of financial intermediaries within financial markets.
V	BBA5D01	E-Commerce	• CO1:To understand the importance of database systems for business management
			• CO2:To gain a practical orientation to database development and maintenance.
			• CO3:On completing the course the students will be able to Understand the practice of E-commerce, e-payment and also the security issues.
VI	BBA6B12	Organizational Behaviour	• CO1:To familiarize the students with the basic concepts of individual behaviour and organizational behaviour
			• CO2:To enable the students to catch an idea about inter-personal and group behaviour
			• CO3:To acquire knowledge regarding the organizational change and organizational development
			• CO4:Understand the different concepts of Organisational Behaviour
			• CO5:Analyse individual and group behaviour
			• CO6:Understand and deal with organisational change, development and stress
VI	BBA6B13	Management science	• CO1:To provide a basic knowledge about operations research and to acquaint the students some common operations research tools for various business decision marketing situations.
			• CO2:On completion of the course the students will be able to learn different OR techniques useful in managerial decisions.

VI	BBA6B14	Project management	• CO1:To enable the students to acquire basic knowledge of different facets of Project Management.
			• CO2:Understand the different concepts of managing a project
			• CO3: Analyse the viability of a project.
			• CO4:Identify and assess risks (including OHS) as well as the economic, social and environmental impacts of engineering activities.
			• CO5:Communicate in various ways to collaborate with other people, including accurate listening, reading and comprehension, based on dialogue when appropriate, taking into account the knowledge, expectations, requirements and terminology.
VI	BBA6B15	Financial services	• CO1: The students with an understanding of the various financial services and investment opportunities available in the country
			• CO2: On completion of the course students will be able to aware of various financial services available in Indian financial system
			• CO3: Describe operational, business,financial and traditional risk.
			• CO4: Distinguish among various financial intermediaries and markets.
VI	BBA6B16	Investment management	• CO1: To familiarise the students with the world of investments and to provide a theoretical framework for the analysis and valuation of investments.
			• CO2: By completing the course students will be able to aware of various investment opportunities from an investor's perspective of maximizing return on investment.

			• CO3: Develop the relationship between interests and prices of bonds.
			• CO4: Understand the nature of share prices movements.
			• CO5: Interpret the evidence relating to market efficiency.
VI	BBA6B17 (PR)	Project and viva voce	• CO1: Develop a thorough understanding of the chosen subject area.
			• CO2: Demonstrate the ability to collate and critically assess/interpret data
			• CO3: Develop an ability to effectively communicate knowledge in a scientific manner.
			• CO4: Provide recommendations based on research findings.

DEPARTMENT OF PHYSICS

Programme Specific Outcomes (PSOs) – B. Sc Applied Physics (2020 Admissions)

	Programme specific outcomes
PSO1	Understand the basic concepts of methodology of science and the fundamentals of mechanics, properties of matter and electrodynamics
PSO2	Understand the theoretical basis of quantum mechanics, relativistic physics, nuclear physics, optics, spectroscopy, solid state physics, astrophysics, statistical physics, photonics and thermodynamics
PSO3	Understand and apply the concepts of electronics in the designing of different analog and digital circuits
PSO4	Understand the basics of computer programming and numerical analysis
PSO5	Apply and verify theoretical concepts through laboratory experiments

Course Outcomes

Semester	Course Code	Course Name	Course outcomes
I	APH1B01	**MECHANICS I**	• CO1-Understand and apply the basic concepts of Newtonian Mechanics to Physical Systems
			• CO2- Understand and apply the basic idea of work-energy theorem to physical systems

			• CO3- Understand and apply the rotational dynamics of rigid bodies
II	APH2B02	MECHANICS II	• CO1-Understand the features of non-inertial systems and fictitious forces
			• CO2- Understand and analyze the features of central forces with respect to planetary motion
			• CO3- Understand the basics ideas of harmonic oscillations
			• CO4-Understand and analyze the basics concepts of wave motion
III	APH3B03	ELECTRODYNAMICS I	• CO1- Understand and apply the fundamentals of vector calculus

			• CO2- Understand and analyze the electrostatic properties of physical systems
			• CO3- Understand the mechanism of electric field in matter.
			• CO4- Understand and analyze the magnetic properties of physical systems
			• CO5- Understand the mechanism of magnetic field in matter.
III	A11	PYTHON	• CO1- Understand various statements, data types and functions in Python
			• CO2- Develop programs in Python programming language
			• CO3- Understand the basics of Object oriented programming using Python
III	A12	SENSORS AND TRANSDUCERS	• CO1- Explain resistance, inductance and capacitance transducers.
			• CO2-Perceive the concepts of temperature and pressure transducers.
			• CO3- Perceive the concepts level transducers such as and flow transducers
			• CO4-Explain Electromagnetic transducers and radiation sensors
			• CO5- Explain force and torque transducers and sound transducers
IV	APH4B04	ELECTRODYNAMICS II	• CO1- Understand the basic concepts of electrodynamics
			• CO2- Understand and analyze the properties of electromagnetic waves
			• CO3- Understand the behavior of transient currents
			• CO4- Understand the basic aspects of ac circuits
			• CO5- Understand and apply electrical network theorems
IV	A13	DATA COMMUNICATION & OPTICAL FIBERS	• CO1- Understand the fundamentals of transmission
			• CO2- Understand the multiplexing
			• CO3-Understand the different protocols regarding data link

			• CO4- Understand the fundamentals of OFC
IV	A14	MICROPROCESSORS – ARCHITECTURE AND PROGRAMMING	• CO1- Understand the fundamentals of a microcomputer
			• CO2- Understand the microprocessor programming
			• CO3- Understand the fundamentals of Microprocessor architecture
			• CO4-Understand the basics of INTEL 8085
			• CO5- Understand various controls of INTEL 8085,8086
IV	APH4B05(1)	PRACTICAL-I(1)	• CO1-Apply and illustrate the concepts of properties of matter through experiments
			• CO2-Apply and illustrate the concepts of electricity through experiments
			• CO3-Apply and illustrate the concepts of optics through experiments
			• CO4-Apply and illustrate the principles of magnetism through experiments
IV	APH4B05(2)	PRACTICAL-I(2)	• CO1-Apply and illustrate the concepts of optics through experiments
			• CO2-Apply and illustrate the concepts of electricity through experiments
			• CO3-Apply and illustrate the concepts of thermodynamics through experiments
			• CO4-Apply and illustrate the principles of magnetism through experiments
V	APH5B06	COMPUTATIONAL PHYSICS	• CO1-Understand the Basics of Python programming
			• CO2- Understand the applications of Python modules
			• CO3-Understand the basic techniques of numerical analysis

			• CO4-Understand and apply computational techniques to physical problems
V	APH5B07	QUANTUM MECHANICS	• CO1-Understand the particle properties of electromagnetic radiation
			• CO2- Describe Rutherford – Bohr model of the atom
			• CO3-Understand the wavelike properties of particles
			• CO4-Understand and apply the Schrödinger equation to simple physical systems
			• CO5- Apply the principles of wave mechanics to the Hydrogen atom
V	APH5B08	OPTICS	• CO1- Understand the fundamentals of Fermat"s principles and geometrical optics
			• CO2- Understand and apply the basic ideas of interference of light
			• CO3- Understand and apply the basic ideas of diffraction of light
			• CO4- Understand the basics ideas of polarization of light
			• CO5- Describe the basic principles of holography and fibre optics
V	APH5B09	ELECTRONICS (ANALOG & DIGITAL)	• CO1-Understand the basic principles of rectifiers and dc power supplies
			• CO2- Understand the principles of transistor
			• CO3- Understand the working and designing of transistor amplifiers and oscillators
			• CO4- Understand the basic operation of Op – Amp and its applications
			• CO5- Understand the basics of digital electronics
V	APH5D01(1)	NONCONVENTIONAL ENERGY SOURCES	• CO1- Understand the importance of non conventional energy sources
			• CO2- Understand basic aspects of solar energy
			• CO3- Understand basic principles of wind energy conversion

			• CO4-Understand the basic ideas of geothermal and biomass energy and recognize their merits and demerits
			• CO5- Understand the basic ideas of oceans and chemical energy resources and recognize their merits and demerits
VI	APH6B10	THERMODYNAMICS	• CO1- Understand the zero and first laws of thermodynamics
			• CO2-Understand the thermodynamics description of the ideal gas
			• CO3- Understand the second law of thermodynamics and its applications
			• CO4- Understand the basic ideas of entropy
			• CO5- Understand the concepts of thermodynamic potentials and phase transitions
VI	APH6B11	STATISTICAL PHYSICS, SOLID STATE PHYSICS, SPECTROSCOPY & PHOTONICS	• CO1-Understand the basic principles of statistical physics and its applications
			• CO2- Understand the basic aspects of crystallography in solid state physics
			• CO3- Understand the basic elements of spectroscopy
			• CO4- Understand the basics ideas of microwave and infra red spectroscopy
			• CO5-Understand the fundamental ideas of photonics
VI	APH6B12	NUCLEAR PHYSICS AND PARTICLE PHYSICS	• CO1- Understand the basic aspects of nuclear structure and fundamentals of radioactivity
			• CO2- Describe the different types of nuclear reactions and their applications
			• CO3- Understand the principle and working of particle detectors
			• CO4- Describe the principle and working of particle accelerators
			• CO5 Understand the basic principles of elementary particle physics

VI	APH6B13	RELATIVISTIC MECHANICS AND ASTROPHYSICS	• CO1-Understand the fundamental ideas of special relativity
			• CO2- Understand the basic concepts of general relativity and cosmology
			• CO3-Understand the basic techniques used in astronomy
			• CO4-Describe the evolution and death of star
			• CO5-Describe the structure and classification of galaxies
VI	APH6B14 (EL2)	MICROPROCESSOR AND MICROCOMPUTER SYSTEMS	• CO1- Understand the fundamentals of a microcomputer.
			• CO2-Understand the different number systems
			• CO3- Understand the fundamentals of Microprocessor architecture
			• CO4-Understand the basics of INTEL 8085
			• CO5 Understand the instructions and various controls of INTEL 8085
VI	APH6B15:	PRACTICAL II	• CO1-Apply and illustrate the principles of semiconductor diodes and transistors through experiments
			• CO2-Apply and illustrate the principles of transistor amplifier and oscillator through experiments
			• CO3-Apply and illustrate the principles of digital electronics through experiments
			• CO4-Analyze and apply computational techniques using C programming
VI	APH6B16	PRACTICALS III	• CO1- Apply and illustrate the ideas of Network theorems through experiments
			• CO2-Apply and illustrate the concepts of multivibrators through experiments
			• CO3- Apply and illustrate the ideas of Operational amplifiers through experiments
			• CO4- Apply and illustrate the ideas of digital electronics through experiments

VI	APH6B17(P)	PROJECT	• CO1-Understand research methodology
			• CO2- Understand and formulate a research project
			• CO3- Design and implement a research project
			• CO4- Identify and enumerate the scope and limitations of a research project

Department of Botany

Programme Specific Outcomes (PSOs) – B. Sc Botany Core Course and Complementary Course

B. Sc Botany Core Programme

	Programme specific outcomes
PSO1	**Scope and importance of Botany:** Understand scope and importance of Botany in every field especially in dealing with societal and environmental issues, agriculture, ethics and healthcare.
PSO2	**Environmental concern:** Understand the and the role of plants in sustaining life on earth and the interrelationship between human beings and nature, create awareness on natural resources and their importance in sustainable development, analyze the importance of biodiversity conservation, estimate biodiversity loss and develop conservation strategies.
PSO3	**Scientific temper:** Develop scientific temper and undertake scientific projects.
PSO4	**Practical applications:** Identify and classify plants according to the principles of plant systematics, apply techniques like plant propagation methods, organic farming, mushroom cultivation, preparation of biofertilizers, biopesticides etc. in daily life.
PSO5	**Awareness on life processes:** Understand plant life processes, biomolecules, basic hereditary and evolutionary principles.

Course Outcomes

Semester	Course Code	Course Name	Course outcomes
I	BOT1B01T	Angiosperm Anatomy, Reproductive Botany and Palynology	CO1: Demonstrate the ability to differentiate plant organs by observing anatomical features.
			CO2: Understand the non-living inclusions of plants and their significance.

			CO3: Differentiate tissues and their functions.
			CO4: Illustrate primary and secondary (normal and anomalous) structures of plant organs.
			CO5: Explain various developmental details of angiosperms.
			CO6: Realize the significance and applications of palynology.
II	BOT2B02T	Microbiology, Mycology, Lichenology And Plant Pathology	• CO1:Understand basics of microbial life and their economic importance.
			• CO2:Develop general awareness on the diversity of microorganisms, fungi and lichens.
			• CO3:Analyze the ecological role played by bacteria, fungi and lichens
			• CO4: Identify plant diseases andfind out control measures
			• CO5: Realize the significance ofplant diseases as far as crop production is concerned.
III	BOT3B03T	Phycology, Bryology and Pteridology	• CO1:Appreciate the diversity and evolutionary significance of lower plant groups
			• CO2: Classify algae, bryophytesand pteridophytes.
			• CO3:Understand the economicand ecological importance of lower plant groups.
IV	BOT4B04T	Methodology and Perspectives In Plant Science	• CO1: Develop scientific temperand problem solving skills.
			• CO2:Undertake scientificprojects and prepare project reports

			• CO3: Summarize, organize anddisplay quantitative data and derive conclusions
			• CO4: Prepare permanent slides, applying the histochemical techniques
V	BOT5B06T	Gymnosperms, Palaeobotany, Phytogeography	• CO1:Understand the role of gymnosperms as a connecting link between pteridophytes and angiosperms
			• CO2: Appreciate the process oforganic evolution.
			• CO3: Realize the importance offossil study.
			• CO4: Understand the climatic conditions of the past and realize the changes happened
			• CO5: Recognize the phytogeographic zones of India.
V	BOT5B07T	Angiosperm Morphology and Systematics	• CO1: Appreciate the diversemorphology of angiosperms.
			• CO2: Identify and classify plantsbased on taxonomic principles.
			• CO3:Make scientific illustrationsof vegetative and reproductive structures of plants
			• CO4: Develop the skill of scientific imaging of plants.
			• CO5: Realize the importance offield study
			• CO6: Change their attitude towards over exploitation of rare/endemic plants.
V	BOT5B08T	Tissue Culture, Horticulture, Economic Botany and Ethnobotany	• CO1:Critically evaluate the advantages of tissue culture and horticulture over conventional methods of propagation.

			• CO2: Apply various horticulturalpractices in the field.
			• CO3: Experiment on the subjectand try to become entrepreneurs.
			• CO4: Identify the economicallyimportant plants
V	BOT5B09T	Cell Biology and Biochemistry	• CO1:Appreciate the u
			• CO2:Enumerate the functions ofeach cell organelle
			• CO3: Draw and explain thestructure of biomolecules.
V	BOT2D02T	Open Course-Choice II Applied Botany	• CO1:Develop general awareness on applied aspects of Plant science.
			• CO2:Realize the role of plants in everyday life.
			• CO3: Apply vegetative propagation methods in everyday life.
			• CO4: Realize the economic importance of plants
VI	BOT6B10T	Genetics And Plant Breeding	• CO1:Appreciate the facts behindheredity and variations.
			• CO2:Understand the l
			• CO3: Solve problems related toclassical genetics.
			• CO4:Predict the pattern of inheritance
			• CO5: Understand various plantbreeding techniques
			• CO6: Realize the role of plant breeding in increasing crop productivity.
VI	BOT6 B11T	Biotechnology, MolecularBiology And Bioinformatics	• CO1:Analyze the role of biotechnology in daily life.
			• CO2:Understand the l
			• CO3:Explain the concepts in molecular biology.
VI	BOT6B12T	Plant Physiology	• CO1:Identify the

		AndMetabolism	physiologicalresponses of plants.
			• CO2:Analyze the role of external factors in controlling the physiology of plants.
			• CO3:Explain the metabolicprocesses taking place in each cell.
			• CO4:Appreciate the energy fixing and energy releasing processes taking place in cells.
VI	BOT6B13T	Environmental Science	• CO1:Realize the importance ofecological studies.
			• CO2:Develop environmental concern in all their actions and practise Reduce, Reuse andRecycle.
			• CO3:Try to reduce pollution and environmental hazards and change their attitude towards throwing away plastic wastes
			• CO4:Spread awareness of theneed of conservation of biodiversity and natural resources.
			• CO5:Analyze the reasons for climate change and find out ways to combat it.
VI	BOT6B14T(E3)	Genetics And Crop Improvement	• CO1:Understand varioustechniques employed for increasing crop productivity
			• CO2: Identify diseases affectingcrop plants
			• CO3:Attain general awareness on various crop research stations of the country.

Name of Programme : B.Sc. Botany (Complementary Course)

Semester	Course Code	Course Name	Course outcomes
I	BOT1C01T	Angiosperm Anatomy And Microtechnique	CO1: Explain the types, structure and functions of plant tissues.
			CO2: Explain primary and secondary (normal and anomalous) structures of plant organs.
			CO3: Identify plant organs by observing anatomical features.
			CO4: Illustrate primary and secondary (normal and anomalous) structures of plant organs.
			CO5: Apply the histochemical techniques in laboratory works.
II	BOT2C02T	Cryptogams, Gymnosperms and Plant Pathology	CO1: Analyze the role of the lower plants in the process of evolution.
			CO2: Explain the ecological significance of lower plants.
			CO3: Identify plant diseases and take remedial measures to control them.
III	BOT3C03T	Morphology, Systematic Botany, Economic Botany, Plant Breeding and Horticulture	CO1:Appreciate the diverse morphology of angiosperms.
			CO2: Identify and classify plants based on taxonomic principles
			CO3: Make scientific illustrations of vegetative and reproductive structures of plants
			CO4: Identify the economically important plants
			CO5: Understand the basic principles of plant breeding
			CO6: Apply various horticultural practices in the field
IV	BOT4C04T	Plant Physiology, Ecology and Genetics	CO1: Explain the physiological processes in plants.
			CO2: Understand the basic principles of heredity and variation.
			CO3: Realize the importance of ecology
			CO4: Spread awareness of the necessity of conservation of biodiversity and natural resources
			CO5: Solve problems related to

			classical genetics

DEPARTMENT OF CHEMISTRY

Programme Specific Outcomes (PSOs) – BSc Chemistry Programme

	Programme specific outcomes
PSO1	To enable the students to understand basic facts and concepts in chemistry and to apply its principles.
PSO2	To appreciate the achievements in chemistry and to know the role of chemistry in nature and in society.
PSO3	To familiarize with the emerging areas of chemistry and their applications in various spheres of chemical sciences and to apprise the students of its relevance in future studies.
PSO4	To develop skills in the proper handling of instruments and chemicals and to familiarize with the different processes used in industries and their applications.
PSO5	To develop an eco-friendly attitude by creating a sense of environmental awareness and to be conversant with the applications of chemistry in day-to-day life.

Course outcomes

Semester	Course Code	Course Name	Course outcomes
I	CHE1B01	Theoretical and Inorganic Chemistry-I	• CO1:To apply the methods of a research project.
			• CO2:To understand the principles behind volumetry.
			• CO3:Toanalyse the characteristics of different elements.
			• CO4:To distinguish between different acid base concepts.
			• CO5:Toanalyse the stability of different nuclei.
II	CHE2B02	Theoretical and Inorganic Chemistry-	• CO1:To understand the importance and the impact of quantum revolution inscience.

		II	• CO2:To understand and apply the concept that the wave functions of hydrogen atom are nothing but atomic orbitals.

			• CO3 :To understand that chemical bonding is the mixing of wave functions of thetwo combining atoms.
			• CO4 :To understand the concept of hybridization as linear combination of orbitals of the same atom.
			• CO5:To inculcate an atomic/ molecular level philosophy in the mind.
III	CHE3B03	Physical Chemistry - I	• CO1 :To understand the properties of gaseous state and how it links to thermodynamic systems.
			• CO2 :To understand the concepts of thermodynamics and it's relation to statistical thermodynamics.
			• CO3:To apply symmetry operations to categorize different molecules.
IV	CHE4B04	Organic Chemistry– I	• CO1:To apply the concept of stereochemistry to different compounds.
			• CO2:To understand the basic concepts of reaction mechanism.
			• CO3 :To analyse the mechanism of a chemical reaction.
			• CO4:Toanalyse the stability of different aromatic systems.
IV	CHE4B05 (P)	Inorganic Chemistry Practical – I	• CO1:To enable the students to develop skills in quantitative analysis and preparing inorganic complexes.
			• CO2 :To understand the principles behind quantitative analysis.
			• CO3:To apply appropriate techniques of volumetric quantitative analysis in estimations.
			• CO4 :To analyse the strength of different solutions.

V	CHE5B06	Inorganic Chemistry – III	• CO1 :To understand the principles behind qualitative and quantitative analysis.
			• CO2 :To understand basic processes of metallurgy and to analyse the merits of • different alloys.
			• CO3:To understand the applications of different inorganic polymers.
			• CO4 :Toanalyse different polluting agents.
			• CO5:To apply the principles of solid waste management.
V	CHE5B07	Organic Chemistry – II	• CO1 :To understand the difference between alcohols and phenols.
			• CO2 :To understand the importance of ethers and epoxides.
			• CO3:To apply organometallic compounds in the preparation of different functional groups.
			• CO4 :To apply different reagents for the inter conversion of aldehydes, carboxylic acids and acid derivatives.
			• CO5 :To apply active methylene compounds in organic preparations
V	CHE5B08	PHYSICAL CHEMISTRY – II	• CO1 :To apply the concept of kinetics, catalysis and photochemistry to various chemical and physical processes.
			• CO2:To characterise different molecules using spectral methods.
			• CO3 :To understand various phase transitions and its applications.
V	CHE5D01	Environmental Chemistry	• CO 1: Recall the technical/scientific terms involved in pollution.
			• CO 2: Understand the causes and effects of air pollution.
			• CO 3: Understand the sources, types and effects of water pollution.

			• CO4:Describe water quality parameters.
			• CO5: Know soil, noise, thermal and radioactive pollutions and their effects.
			• CO6:Study various pollution control measures.
			• CO7:Understand the basics of green chemistry.
VI	CHE6B09	Inorganic Chemistry – IV	• CO1 :To understand the principles behind different instrumental methods.
			• CO2:To distinguish between lanthanides and actinides.
			• CO3 :To appreciate the importance of CFT.
			• CO4 :To understand the importance of metals in living systems.
			• CO5 :To distinguish geometries of coordination compounds.
VI	CHE6B10	Organic Chemistry – III	• CO1 :To elucidate the structure of simple organic compounds using spectral techniques.
			• CO2 :To understand the basic structure and tests for carbohydrates.
			• CO3 :To understand the basic components and importance of DNA.
			• CO4:To understand the basic structure and applications of alkaloids and terpenes.
			• CO5:To distinguish different pericyclic reactions.
VI	CHE6B11	Physical Chemistry – III	• CO1:To understand the basic concepts of electrochemistry.
			• CO2 :To understand the importance of colligative properties.
			• CO3:To relate the properties of materials/solids to the geometrical properties and chemical compositions.

VI	CHE6B12	Advanced and Applied Chemistry	• CO1: To understand the importance of nanomaterials
			• CO2:To appreciate the importance of green approach in chemistry.
			• CO3:To understand the uses and importance of computational calculations inmolecular design.
			• CO4:To understand the role of chemistry in human happiness index and lifeexpectancy
VI	CHE6B13(E3)	Medicinal And Environmental Cehmistry	• CO1:To understand the importance of drugs in human health
			• CO2:To understand the facts about common diseases and treatment
			• CO3:To identify the presence of toxic substances in atmosphere
			• CO4:To apply chemistry in treatment of water and sewage.
VI	CHE6B14(P)	Physical Chemistry Practical	• CO1:To enable the students to develop analytical skills in determining the physical properties (physical constants).
			• CO2 : To develop skill in setting up an experimental method to determine the physical properties
			• CO3: To understand the principles of Refractometry, Potentiometry and Conductometry.
VI	CHE6B15(P)	Organic Chemistry Practical	• CO1: To enable the students to develop analytical skills in organic qualitative analysis.
			• CO2 : To develop talent in organic preparations to ensure maximum yield

			• CO3: To apply the concept of melting or boiling points to check the purity of compounds
			• CO4 : To analyse and characterise simple organic functional groups.
			• CO5: To analyse individual amino acids from a mixture using chromatography
VI	CHE6B16(P)	Inorganic Chemistry Practcal-II	• CO1: To enable the students to develop analytical skills in inorganic quantitative analysis.
			• CO2 : To understand the principles behind gravimetry and to apply it in quantitative analysis
			• CO3: To understand the principles behind colorimetry and to apply it in quantitative analysis
VI	CHE6B17(P)	Inorganic Chemistry Practcal-III	• CO1:To enable the students to develop skills in inorganic qualitativeanalysis.
			• CO2: To understand the principles behind inorganic mixture analysis and to apply it in qualitative analysis.
			• CO3:To analyse systematically mixtures containing two cations and two anions.
VI	CHE6B18(Pr)	Project Work	• CO1 : To understand the scientific methods of research project.
			• CO2:To apply the scientific method in life situations.
			• CO3:To analyse scientific problems systematically.

DEPARTMENT OF ZOOLOGY

B. Sc Zoology Programme

Programme Outcomes (POs) -

	Programme outcomes

PO1	Critical Thinking: Take informed actions after identifying the assumptions that frame our thinking and actions, checking out the degree to which these assumptions are accurate and valid, and looking at our ideas and decisions (intellectual, organizational, and personal) from different perspectives
PO2	Problem Solving: Understand and solve the problems of relevance to society to meet the specified needs using the knowledge, skills and attitudes acquired from humanities/ sciences/mathematics/social sciences.
PO3	Effective Communication: Speak, read, write and listen clearly in person and through electronic media in English and in one Indian language, and make meaning of the world by connecting people, ideas, books, media and technology.
PO4	Effective Citizenship: Demonstrate empathetic social concern and equity centered national development, and the ability to act with an informed awareness of issues and participate in civic life through volunteering
PO5	Environment and Sustainability: Understand the issues of environmental contexts and sustainable development
PO6	Self-directed and Life-long Learning: Acquire the ability to engage in independent and life-long learning in the broadest context of socio- technological changes

Programme Specific Outcomes (PSOs)

	Programme specific outcomes
PSO1	Understand the biological diversity and grades of complexity of various animal forms through their systematic classification and process of organic evolution
PSO2	Understand the roles of plants, animals and microbes in the sustainability of the environment and their interaction among themselves and deterioration of the environment due to anthropogenic activities.
PSO3	Understand the concepts and principles of biochemistry, immunology, physiology, ethology, endocrinology, developmental biology, cell biology, genetics, molecular biology and microbiology and develop technical skills in biotechnology, bioinformatics and biostatistics
PSO4	Perform laboratory procedures as per standard protocols in the areas of animal diversity, systematics, cell biology, genetics, biochemistry, molecular biology, microbiology, physiology, immunology, developmental biology, environmental biology, ethology, evolution and science methodology,

Course Outcomes

Semester	Course Code	Course Name	Course outcomes
I	ZOL1B01T	Animal Diversity: Non-Chordata Part- I	• CO1: Describe the principles of classification and nomenclature
			• CO2: Explain the five kingdom classification ofliving organisms
			• CO3: Understand the concepts of classificationof animals
			• CO4: Explain the classification with examplesand characteristic features of kingdom Protista and describe the morphology andstructural organization of Paramecium
			• CO5: Describe the characteristic features of subkingdom Mesozoa
			• CO6: Explain the classification of phylum Porifera and elucidate the salient features of each class
			• CO7: Describe the characteristic features of phylum Cnidaria and Ctenophora, illustrate the classification of phylum Cnidaria down to classes and explain the structural organization of Obelia

			• CO8: Explain the salient features of phylum Platyhelminthes and illustrate its classification down to classes
			• CO9: Explain the characteristic features and classification of super-phylum Aschelminthes and phylum Nematoda
			• CO10: Elucidate the characters of Pseudocoelomate minor phyla Rotifera and Gastrotricha
II	ZOL2B02T	Animal Diversity: Non-Chordata Part – II	• CO1: Explain the classification with examples and characteristic features of phylum Annelida and describe the morphology and structural organization of Neanthes
			• CO2: Describe the distribution, peculiarities and affinities of phylum Onychophora
			• CO3: Explain the classification of phylum Arthropoda;elucidate the salient features of each class and describe the morphology and structural organization of Penaeus
			• CO4: Describe the characteristic features of phylum Mollusca, illustrate its classification down to classes and explain the structural organization of Pilaglobosa
			• CO5: Explain the salient features of phylum Echinodermata and illustrate its classification down to classes
			• CO6: Understand the salient features and affinities of phylum Hemichordata
			• CO7: Elucidate the characters of coelomate minor phyla Phoronida, Ectoprocta and Echiura
III	ZOL3B03T	Animal Diversity: Chordata Part – I	• CO1: Explain the characteristics of chordates and outline classification of the phylum Chordata
			• CO2: Describe the salient features and affinities of subphylum Urochordata and its classification down to classes; elucidate the morphology and structural organization of Ascidia
			• CO3: Explain the salient features and affinities of subphylum Cephalochordata with reference to Branchiostoma

			• CO4: Describe the salient features of subphylum Vertebrata, illustrate its classification down to classes and elucidate the characteristics of division Agnatha
			• CO5: Enumerate the salient features of superclass Pisces and illustrate its classification down to orders and the morphology and structural organization of Mugilcephalus
			• CO6: Describe the salient features and affinities of class Amphibia and its classification up to orders; explain the morphology and organ systems of Hoplobatrachustigerinus
			• CO7: Elucidate the characteristic features of theclass Reptilia and its classification down to orders; describe the morphology and organ systems of Calotesversicolor
IV	ZOL4B04T	Animal Diversity: Chordata Part-II	• CO1: Describe the classification of class Aves down to orders, salient features of each order with suitable examples
			• CO2: Describe the external characters and functional systems of Columba livia
			• CO3: Enumerate the salient features and classification of class Mammalia down to orders with suitable examples
			• CO4: Elucidate the external characters and functional systems of Oryctolaguscuniculus
			• CO5: Compare the circulatory, excretory and systems of vertebrates
IV	ZOL4B05P	Zoology [Core Course] Practical – I: Animal Diversity	• CO1: Identify and describe specified protists and acoelomate & pseudocoelomate nonchordates and perform the culture of selected protists; understand the histological features of coelenterate, platyhelminth and nematode
			• CO2: Identify and describe specified coelomate non-chordates and the transverse sections of annelids; Perform mounting of the specified organs of selected nonchordates.
			• CO3: Identify and describe specified chordates and specified bones of chordates; Prepare key for identification of venomous snakes; Perform mounting and dissection of specified organ systems of chordates.
			• CO4: Identify and describe selected vertebratesand specified bones of vertebrates.

V	ZOL5B06T	Cell Biology And Genetics	• CO1: Understand the principles and applications of various types of light microscopes, electron, Scanning-tunnelling and Atomic force microscope and illustrate the histological and histochemical processing of tissues
			• CO2: Explain the basic structure of a eukaryotic cell and the structure and functions of plasma membrane, mitochondria, lysosome, cytoskeletal elements and interphase nucleus
			• CO3: Illustrate the nucleosome organization of chromatin and higher order structures; structure of chromosomes and giant chromosomes
			• CO4: Enumerate eukaryotic cell cycle and celldivision by amitosis, mitosis and meiosis
			• CO5: Explain the causes of transformation, characteristics of transformed cells and the role of protooncogenes and tumor suppressor genes in malignant transformation; mechanism and significance of apoptosis
			• CO6: Enumerate allelic and non-allelic gene interactions; supplementary, complementary, polymeric, duplicate and modifying genes and polygenic inheritance
			• CO7: Illustrate multiple allelism and solve problems related to blood group inheritance
			• CO8: Explain characteristics of linkage groups and linkage map; crossing over and calculation of recombination frequency; sex-linked, sex-influenced and sex-limited characters; sex differentiation and disorders of sexual development
			• CO9: Describe the mechanisms of sex determination including chromosomal, genic, haploid-diploid mechanisms; the hormonal and environmental influence on sex determination and gynandromorphism
			• CO10:Explain mutagenesis, mutagens and chromosomal and gene mutations
			• CO11: Enumerate the classification and grouping of human chromosomes; numerical and mutational human autosomal and sex chromosomal anomalies; polygenic human traits and genetic counseling

V	ZOL5B07T	Biotechnology, Microbiology And Immunology	• CO1: Illustrate the steps in genetic engineeringand animal cell culture
			• CO2: Explain transfection methods, transgenic animals and ethical issues of transgenic animals
			• CO3: Enumerate the applications of biotechnology
			• CO4: Understand the biological diversity of microbial forms and the various techniques for handling microbes in the laboratory
			• CO5: Enumerate the basic structure and life cycle of bacteria and virus
			• CO6: Understand the industrial and medical importance of microorganisms
			• CO7: Describe different types of immunity andthe cells and organs of the immune system
			• CO8: Explain antigen, antibody, immunity andmajor histocompatibility complex
			• CO9: Enumerate autoimmune and immunodeficiency diseases and immunology of tumor and organ transplantation
V	ZOL5B08T	Biochemistry And Molecular Biology	• CO1: Understand the elements of biological importance and the non-covalent interactions that stabilize biomolecules
			• CO2: Describe the classification, types, structure, reactions and biological roles of carbohydrates, and diabetes Type I and II
			• CO3: Enumerate the properties and classification of amino acids and their standard abbreviations; hierarchial levels of protein structure, classification, separation, purification and sequencing of proteins
			• CO4: Explain the classification and functions of lipids and fatty acids; chemistry and structure of nucleic acids and sequencing of DNA
			• CO5: Understand the classification, nomenclature and properties of enzymes; enzyme action, co-enzymes, cofactors, isozymes, ribozymes and allosteric enzymes
			• CO6: Explain glycolysis, Kreb's cycle, glycogenesis, glycogenolysis, gluconeogenesis, HMP pathway; amino acid and fatty acid oxidation and oxidative phosphorylation

			• CO7: Describe the mechanism of DNA duplication and the role of enzymes
			• CO8: Understand the concept of gene and gene expression; genetic code and wobble Hypothesis
			• CO9: Explain the mechanism of transcription and post-transcriptional modification of hnRNA
			• CO10: Enumerate the processes of translation and post-translational modification and targeting of peptides
			• CO11: Describe the regulation of trp operon, C-value, repetitive DNA, satellite DNA, selfish DNA, overlapping genes, pseudogenes, cryptic genes, transposons and retrotransposons
			• CO12: Explain the structure and life cycle of bacteriophages and the gene transfer mechanisms in bacteria
V	ZOL5B09T	Methodology In Science, Biostatistics And Bioinformatics	• CO1: Explain science, its importance, disciplines and the major steps in formulating a hypothesis, various hypothesis models, theory, law and importance of animal models, simulations and virtual testing
			• CO2: Illustrate the principles and procedures in designing experiments and elaborate the requirements for carrying out experiments
			• CO3: Describe the ethical concerns in practicing science
			• CO4: Understand the Scope and role of statistics; methods and procedures of sampling; Construction of tables, charts and graphs
			• CO5: Calculate central tendency and measures of dispersion and application of its knowledge on hypothesis testing as well as in problem solving
			• CO6: Enumerate major biological databases and database search engines
			• CO7: Perform DNA and protein sequence analysis, including sequence alignment and sequence similarity search using BLAST, FASTA, CLUSTAL W and CLUSTAL X
			• CO8: Understand molecular phylogenetics and tools and methods for construction of phylogenetic trees

			• CO9:Explain genome sequencing technologies, functional genomics, proteomic technologies and molecular docking and drug design
V	ZOL6B15P	Zoology [Core Course] Practical – II	• CO1: Perform experiments in cell biology and genetics including demonstration of Barr body in buccal epithelial cells of man, polytene chromosome in the salivary glands of D. Melanogaster larva, mitotic division in onion root tip cells, micrometry of microscopic objects, prepare whole mounts of microscopic objects, and calculatemitotic and metaphase index from slides
			• CO2: Enumerate the inheritance of major human genetic traits, pedigree chart, normal and abnormal human karyotypes, phenotypic differences of male and female drosophila and solve problems on Monohybrid, dihybrid crosses, blood groups and sex-linked inheritance.
			• CO3: Understand electrophoresis, PCR, Northern blotting, Southern blotting and Western blotting, DNA sequencing and fingerprinting and isolation of genomic DNA.
			• CO4: Perform gram staining and preparation of culture media for bacteria and demonstrate bacterial motility by standard laboratory protocols
			• CO5: Understand the detection of human bloodgroups and organs of immune system
			• CO6: Perform standard biochemical tests for the detection of reducing and nonreducing sugars, polysaccharides, proteins and lipids.
			• CO7: Understand the staining of mitochondria, tissue homogenization and isolation of nuclei, effect of colchicines of cell division, extraction of DNA and polyacrylamide and agarose gel electrophoresis
			• CO8: Solve basic problems in biostatistics andBioinformatics
V	ZOL5D01T	Zoology Open Course- I (Theory) Reproductive Health And Sex Education	• CO1: Understand the reproductive health, andimportance of sex education for teen and youth
			• CO2: Explain the chromosomal mechanism of sex determination and sex chromosomal anomalies

			• CO3: Describe the structural and functional features of human reproductive system, fertilization, implantation, pregnancy, gestation, placenta, parturition and lactation
			• CO4: Explain the scope of reproductive technologies in infertility management and the assisted reproductive techniques
			• CO5: Understand the different methods of prenatal diagnosis and associated ethical issues
			• CO6: Describe the different methods of fertility control.
			• CO7: Understand the symptoms, mode of transmission, diagnosis and treatment of different sexually transmitted diseases andtheir socio economic dimensions
			• CO8: Describe sexual orientation, sexual abuseand myths
			• CO9: Understand the ethical aspects of sex
VI	ZOL6B10T	Physiology And Endocrinology	• CO1: Describe the regulation of digestion in man, nutrition in pregnancy and infancy, nutritional disorders, balanced diet, starvation, fasting and obesity.
			• CO2: Understand the mechanism of transport and exchange of respiratory gases and its neurophysiological control and physiological problems in diving mammals, new-born and aged individuals.
			• CO3: Describe functions, composition, coagulation, transfusion, agglutination and clinical analysis of blood, haemoglobinopathies, types of heart and common cardio-vascular problems
			• CO4: Understand the osmoregulatory mechanisms in animals; excretion and its hormonal control and common renal disorders in man.
			• CO5: Explain the ultrastructure of skeletal muscles and biochemical events and energetics of muscle contraction.
			• CO6: Understand the different types of nerve cells, glial cells and nerve fibres, and the mechanism of nerve impulse transmission
			• CO7: Understand the types, physiology and significance of bioluminescence, and the structure and functions of electric organs.

			• CO8: Describe invertebrate neuro-endocrine organs and hormones, vertebrate endocrine glands, their hormones and functions
			• CO9:Understand the concept of neurosecretion and the mode of action of peptide and steroid hormones.
VI	ZOL6B11T	Reproductive And Developmental Biology	• CO1: Explain the reproductive strategies in invertebrates and vertebrates and structural and functional features of human reproductive system
			• CO2: Describe process of fertilization, pregnancy, gestation, placentation, parturition and lactation in humans.
			• CO3: Explain the scope of reproductive technologies in infertility management; prenatal diagnostic techniques and methods of fertility control
			• CO4: Understand the phases and theories of development, and classification of eggs
			• CO5: Enumerate the types of cleavage, arrangement of blastomeres, germ layers and their derivatives, cell lineage in Planocera and different types of blastula.
			• CO6: Illustrate the early developmental process of egg in Amphioxus,frog, chick and man
			• CO7: Explain the basics of cell differentiation and its genetic control, stem cells and applications of stem cell technology
			• CO8: Describe parthenogenesis, types, and significance
			• CO9: Explain fate map construction, Spemann's constriction experiments on amphibian embryos, organizers in development, embryonic induction, gradient experiments in sea urchin eggs, cloning experiments in sheep and teratogenesis.
VI	ZOL6B12T	Environmental And Conservation Biology	• CO1: Explain the structure of ecosystem and its functioning through energy flow and nutrient cycling.
			• CO2: Enumerate biogeochemical cycles and understand the concept of limiting factors
			• CO3: Describe the ecology of population, community and habitat as a self regulating system
			• CO4: Understand various types of population interactions and appraise the co-evolution

			• CO5: Comprehend the diverse environmental and sustainability challenges ranging from local to global and the establishment of perfect harmony between economic development, social issues and environmental conservation
			• CO6: Enumerate the several tools and techniques employed for studies on populations, communities and ecosystems.
			• CO7: Understand the threats to biodiversity, and strategies adapted for the conservation of diversity of organisms
			• CO8: Describe the various international strategies for conserving biodiversity
			• CO9: Describe the toxic chemicals, their toxicity levels and the health hazards caused by them
VI	ZOL6B13T	Ethology, Evolution And Zoogeography	• CO1: Describe the patterns and mechanisms ofanimal behavior
			• CO2: Illustrate biological rhythms and the chemical basis of communication
			• CO3: Identify major evolutionary transitions over time, and explain the tools and evidences that support current hypotheses of the history of life on earth
			• CO4: Describe the evidences for evolution andits required corollaries
			• CO5: Explain the various theories of evolution
			• CO6: Describe the mechanisms by which evolution occurs
			• CO7: Recognize the significance of reproductive isolation in reducing gene flow between populations, biological and morphological species concepts and distinguish between prezygotic and postzygotic barriers to reproduction
			• CO8: Review the events in human evolution
			• CO9: Explain ecological and historical foundations for understanding the distribution and abundance of species, and their changes over time and comprehend the basic principles of biogeography as a discipline
VI	ZOL6B14 (E)02T	Aquaculture, Animal Husbandry And Poultry Science	• CO1: Explain aquaculture and the process of prawn, mussel and pearl culture
			• CO2: llustrate the methodology of pisciculture and understand common culture fishes and ornamental fishes

			• CO3: Identify major fishing crafts and gear andenumerate fish utilization and Preservation
			• CO4: Enumerate the poultry rearing techniques and understand major breeds of fowl
			• CO5: Understand the major breeds of cattle, cattle feeds and diseases of cattle
			• CO6: Illustrate the steps in dairy processing and identify the role of dairy development in rural economy
VI	ZOL6B16P	Zoology [Core Course] Practical – III	• CO1: Perform standard laboratory experiments for the estimation of Hb, presence of hCG/abnormal constituents in urine, detection of blood pressure, bleeding and clotting time and identification of formed elements in blood
			• CO2: Identify selected stages in the development of frog and chick and chosen larval forms of invertebrates and vertebrates
			• CO3: Carry out experiments of laboratory standards to estimate water quality parameters including, dissolved Oxygen, Carbon dioxide, hardness and pH; determination of adulteration of selected food items and identify marine planktons and soil organisms
			• CO4: Demonstrate the behavioural response ofearthworm/dipteran larva to selected stimuli
			• CO5: Describe homologous, analogous and vestigial organs, connecting links, adaptive radiation and evolution of man
			• CO6: Illustrate zoogeographical realms, Wallace line, Weber line, Wallacea and the distribution of Peripatus, lung fishes, Sphenodon, monotremes and marsupials
			• CO7: Identify the normal and selected abnormal human karyotypes and inheritance of chosen traits from pedigree charts/describe ornamental and other culture fishes/ describe chosen beneficial and harmful insects
COMPLEMENTARY COURSE			
I	ZOL1C01T	Animal Diversity And Wildlife Conservation	• CO1: Describe the general characters of protists and salient features of phylum– Rhizopoda,Ciliophora, Dinoflagellata and Apicomplexa
			• CO2: Enumerate the salient features and examples of Phylum – Porifera, Coelenterata,Platyhelminthes,Aschelminthes,Annelida,Arthropoda, Onychophora, Mollusca and Echinodermata, and the structural

			organization of Peneaus sp.
			• CO3: Describe the characteristic features and classification of phylum Chordata with examples and, structural organization of Oryctolaguscuniculus
			• CO4: Explain levels of biodiversity, threats tobiodiversity, biodiversity hotspots, importance and strategies for conservation of wildlife and sustainable development
II	ZOL2C02T	Economic Zoology	• CO1: Explain parasitism and the major protist, cestode, trematode and nematode parasites of man and major insect vectors of human diseases and their control
			• CO2: Understand major beneficial and harmful insects, damages caused to host plants and their control measures
			• CO3: Understand pisciculture, prawn, mussel and pearl culture
III	ZOL3C03T	Physiology And Ethology	• CO1: Describe the structure of plasma membrane and the various trans-membrane transport mechanisms
			• CO2: Enumerate the constituents of normal diet and the mechanism of digestion and absorptionof carbohydrates, proteins and lipids and the regulation of gastrointestinal function
			• CO3: Explain the mechanism of transport of respiratory gases, control of respiration, respiratory problems and artificial ventilation
			• CO4: Explain the structure and working of human heart and mechanism of regulation of heart beat; constituents of human blood and blood transfusion and cardiovascular problems
			• CO5: Illustrate the structure of human kidney, the mechanism of urine formation, hormonal control of kidney function and kidney disorders; osmoregulation and urea cycle
			• CO6: Enumerate the structure of myofibrils and myofilaments; muscle contractile and regulatory proteins and mechanism of muscle contraction
			• CO7 Explain different types of nerve cells and glial cells, maintenance of resting membrane potential, generation and propagation of action potential and synaptic transmission
			• CO8: Describe innate behavior, learned behavior, patterns of behavior and factors that affect behavior

			• CO9: Enumerate biological rhythms, communication in animals and social organization in mammals
IV	ZOL4C04T	Genetics And Immunology	• CO1: Describe human karyotype, chromosomal anomalies and polygenic inheritance
			• CO2 Explain the mechanisms of sex determination
			• CO3: Enumerate the concept of genes, gene expression, genetic code, transcription and translation
			• CO4: Illustrate the mechanism of recombinantDNA technology and its practical applications
			• CO5: Explain the types of cancer, causes of transformation and characteristics of transformed cells
			• CO6: Identify the cells and organs of immunesystem, antigens and antibodies
			• CO7: Enumerate antigen-antibody interaction, generation of B-cell and T-cell response and major immune techniques
			• CO8: Explain primary and secondary immunodeficiency diseases, autoimmune diseases, vaccination and vaccines
IV	ZOL4C05P	Complementary Course Practical	• CO1: Identify the salient features of the phylum; taxonomic position, habit, habitat, adaptations/importance of selected protists, non-chordates and chordates
			• CO2: Describe major human parasites and economically important insects, mollusks and fishes
			• CO3: Perform detection of human blood groupsand prepare human blood smear as per laboratory standards; mounting of specialized organs of selected nonchordates and chordates, and demonstrate the presence of biomolecules in samples by standard laboratory protocols
			• CO4: Illustrate the normal and selected abnormal human karyotypes and mode of inheritance of selected human genetic disorders and perform the dissection of earthworm and sardine to demonstrate the alimentary canal and Penaeus to demonstrate the nervous system

Name of programme: B. Sc. Mathematics

POs	**COs**
PO1: Disciplinary knowledge	**BASIC LOGIC & NUMBER THEORY** CO1: Prove results involving divisibility, greatest common divisor, least common multiple and a few applications CO2: Understand the theory and method of solutions of LDE CO3: Understand the theory of congruence and a few applications. CO4: Learn three classical theorems viz. Wilson's theorem, Fermat's little theorem and Euler's theorem and a few important consequences.
PO2: Communications skills	**CALCULUS OF SINGLE VARIABLE-1** CO1: Introduces fundamental ideas of limit, continuity and differentiability and also to some basic theorems of differential calculus CO2: Deal with the other branch of calculus viz. integral calculus. Historically, it is motivated by the geometric problem of finding out the area of a planar region CO3: Discuss the definite integral not only solves the area problem but is useful in finding out the arc length of a plane curve, volume and surface areas of solids and so on. CO4: Solve problems in a range of mathematical applications using the derivative or the integral;
PO3: Critical thinking	**CALCULUS OF SINGLE VARIABLE-2** CO1: Get the idea of parametrization of curves, they learn how to calculate the arc length, curvature etc CO2: Introduced into other coordinate systems which often simplify the equation of curves and surfaces and the relationship between various

	coordinate systems CO3: Enables them to directly calculate the arc length and surface areas of revolution of a curve whose equation is in polar form CO4: Will be able to handle vectors in dealing with the problems involving geometry of lines, curves, planes and surfaces in space and have acquired the ability to sketch curves in plane and space given in vector valued form.
PO4 : Analytical reasoning	**LINEAR ALGEBRA** CO1: Deals with A number of methods for solving a system of linear equations are discussed CO2: Understand the modern view of a matrix as a linear transformation. CO3: Familiarity of the students with planar vectors and their algebraic properties under vector addition and scalar multiplication will make them realize that the idea of a general vector space is in fact an abstraction of what they already know. CO4: The idea of a subspace, spanning vectors, basis and dimension are discussed and fundamental results in these areas are explored CO5: Practical method of finding out the eigenvalues from the characteristic equation and the corresponding eigenvectors are also discussed CO6: In this process, students realise that every symmetric matrix is diagonalizable and that this diagonalization can be done in a special way ie., by choosing an orthogonal matrix to perform the diagonalization.
PO5 : Problem solving	**ABSTRACT ALGEBRA** CO1: Demonstrate understanding of and the ability to verify relationships between operations satisfying various properties (e.g. commutative property) CO2: Extend group structure to finite permutation groups (Cayley's Theorem). CO3: Acquire the basic knowledge and the structure of Group,

	Subgroup and Cyclic Groups CO4: Use Lagrange's Theorem to analyse the cyclic subgroups of a group CO5: Describe the characteristics of a ring, quotient rings and ideals and also Familiarize with Rings, Integral Domains, Fields and Divisors of Zero
PO6: Research-related skills	**BASIC ANALYSIS** CO1: to learn and deduce rigorously many properties of real number system by assuming a few fundamental facts about it as axioms. In particular they will learn to prove Archimedean property, density theorem, existence of a positive square root for positive numbers and so on and the learning will help them to appreciate the beauty of logical arguments and embolden them to apply it in similar and unknown problems . CO2: to know about sequences, their limits, several basic and important theorems involving sequences and their applications. For example, they will learn how monotone convergence theorem can be used in establishing the divergence of the harmonic series, how it helps in the calculation of square root of positive numbers and how it establishes the existence of the transcendental number e (Euler constant). CO3: to understand some basic topological properties of real number system such as the concept of open and closed sets, their properties, their characterization and so on. CO4: to understand some basic topological properties of real number system such as the concept of open and closed sets, their properties, their characterization and so on. CO5: to get a rigorous introduction to algebraic, geometric and topological structures of complex number system, functions of complex variable, their limit and continuity and so on. Rich use of geometry, comparison between real and complex calculus-areas where they agree and where they differ, the study of mapping properties of a few important complex functions exploring the underlying geometry etc. will demystify student's belief that complex variable theory is incomprehensible.
PO7: Information/digital literacy	**NUMERICAL ANALYSIS** CO1: Understand several methods such as bisection method, fixed point iteration method, regula falsi method etc. to find out the approximate numerical solutions of algebraic and transcendental equations with desired accuracy. CO2: Understand the concept of interpolation and also learn some well known interpolation techniques. CO3: Understand a few techniques for numerical differentiation and integration and also realize their merits and demerits. CO4: Find out numerical approximations to solutions of initial

	value problems and also to understand the efficiency of various methods.
PO8: Self-directed learning	**LINEAR PROGRAMMING** CO1 : solve linear programming problems geometrically. CO2: understand the drawbacks of geometric methods. CO3: solve LP problems more effectively using Simplex algorithm via. the use of condensed tableau of A.W. Tucker. CO4: convert certain related problems, not directly solvable by simplex method, into a form that can be attacked by simplex method. CO5: understand duality theory, a theory that establishes relationships between linear programming problems of maximization and minimization. CO6: understand game theory. CO7: solve transportation and assignment problems by algorithms that take advantage of the simpler nature of these problems.
PO9 :Lifelong learning	**INTRODUCTION TO GEOMETRY AND THEORY OF EQUATIONS** CO1: Understand several basic facts about parabola, hyperbola and ellipse (conics) such as their equation in standard form, focal length properties, and reflection properties, their tangents and normal. CO2: Recognise and classify conics. CO3: Understand Kleinian view of Euclidean geometry. CO4: Understand affine transformations, the inherent group structure, the idea of parallel projections and the basic properties of parallel projections. CO5: Understand the fundamental theorem of affine geometry, its use in the proof of Median theorem, Ceva's theorem, Menelaus' theorem etc. CO6: Learn to solve polynomial equations upto degree four.

PO10: Application skills	**MATHEMATICS FOR DECISION MAKING** CO1: The student could understand the classifications of data. Student is also introduced to various data collection techniques. CO2: Student will learn to visualize various types of data with the use of frequency charts and appropriate graphs. CO3: Student understands concepts like measures of central tendency, measures of variation and measures of position. CO4: Student gets a clear understanding of basic probability concepts. Student learns conditional probability, addition rule and other basic theories in probability. CO5: Student will learn various probability distributions of discrete and continuous variables. CO6: Student learns about the normal distribution, which is an important continuous probability distribution in inferential statistics. CO7: Student understands the standard normal distribution and learns the conversion of normal variable to standard normal variable.
PO11: Experimental skills	**REAL ANALYSIS** CO1: State the definition of continuous functions, formulate sequential criteria for continuity and prove or disprove continuity of functions using this criteria. CO2: Understand several deep and fundamental results of continuous functions on intervals such as boundedness theorem, maximum-minimum theorem, intermediate value theorem, preservation of interval theorem and so on. CO3: Realise the difference between continuity and uniform continuity and equivalence of these ideas for functions on closed and bounded interval. CO5: Understand the significance of uniform continuity in continuous extension theorem. CO6: Develop the notion of Riemann integrability of a function using the idea of tagged partitions and calculate the integral value of some simple functions using the definition. CO7: Understand a few basic and fundamental results of integration theory. CO8: Formulate Cauchy criteria for integrability and a few applications of it. In particular they learn to use Cauchy criteria in proving the non integrability of certain functions.

	CO9: Understand classes of functions that are always integrable. CO10: Understand two forms of fundamental theorem of calculus and their significance in the practical problem of evaluation of an integral. CO11: Find a justification for 'change of variable formula' used in the practical problem of evaluation of an integral. CO12: Prove convergence and divergence of sequences of functions and series. CO13: Understand the difference between pointwise and uniform convergence of sequences and series of functions. CO14: Answer a few questions related to interchange of limits. CO15: Learn and find out examples/counter examples to prove or disprove the validity of several mathematical statements that arise naturally in the process/context of learning. CO16: Understand the notion of improper integrals, their convergence, principal value and evaluation. CO17: Learn the properties of and relationship among two important improper integrals namely beta and gamma functions that frequently appear in mathematics, statistics, science and engineering.
PO12: Moral and ethical awareness/reasoning	**COMPLEX ANALYSIS** CO1: to understand the difference between differentiability and analyticity of a complex function and construct examples. CO2: to understand necessary and sufficient condition for checking analyticity. CO3: to know of harmonic functions and their connection with analytic functions. CO4: to know a few elementary analytic functions of complex analysis and their properties. CO5: to understand definition of complex integral, its properties and evaluation. CO6: to know a few fundamental results on contour integration theory such as Cauchy's theorem, Cauchy-Goursat theorem and their applications. CO7: to understand and apply Cauchy's integral formula and a few consequences of it such as Liouville's theorem, Morera's theorem and so forth in various situations. CO8: to see the application of Cauchy's integral formula in the derivation of power series expansion of an analytic function. CO9: to know a more general type of series expansion analogous to

	power series expansion viz. Laurent's series expansion for functions having singularity. CO10: to understand how Laurent's series expansion lead to the concept of residue, which in turn provide another fruitful way to evaluate complex integrals and, in some cases, even real integrals. CO11: to see another application of residue theory in locating the region of zeros of an analytic function.
	CALCULUS OF MULTI VARIABLE CO1: Understand several contexts of appearance of multivariable functions and their representation using graph and contour diagrams. C02: Formulate and work on the idea of limit and continuity for functions of several variables. CO3: Understand the notion of partial derivative, their computation and interpretation. CO4: Understand chain rule for calculating partial derivatives CO5: Get the idea of directional derivative, its evaluation, interpretation, and relationship with partial derivatives. CO6: Understand the concept of gradient, a few of its properties, application and interpretation. CO7: Understand the use of partial derivatives in getting information of tangent plane and normal line. CO8: Calculate the maximum and minimum values of a multivariable function using second derivative test and Lagrange multiplier method. CO9: Find a few real life applications of Lagrange multiplier method in optimization problems. CO10: Extend the notion of integral of a function of single variable to integral of functions of two and three variables. CO11: Address the practical problem of evaluation of double and triple integral using Fubini's theorem and change of variable formula. CO12: Realise the advantage of choosing other coordinate systems such as polar, spherical, cylindrical etc. in the evaluation of double and triple integrals. CO13: See a few applications of double and triple integral in the problem of finding out surface area, mass of lamina, volume, centre of mass and soon. CO14: Understand the notion of a vector field, the idea of curl and divergence of a vector field, their evaluation and interpretation. CO15: Understand the idea of line integral and surface integral and their evaluations. CO16: Learn three major results viz. Green's theorem, Gauss's

	theorem and Stokes' theorem of multivariable calculus and their use in several areas and directions.
	DIFFERENTIAL EQUATIONS CO1: Students could identify a number of areas where the modelling process results in a differential equation. CO2: They will learn what an ODE is, what it means by its solution, how to classify DEs, what it means by an IVP and so on. CO3: They will learn to solve DEs that are in linear, separable and in exact forms and also to analyse the solution. CO4: They will realise the basic differences between linear and non linear DEs and also basic results that guarantees a solution in each case. CO5: They will learn a method to approximate the solution successively of a first order IVP. CO6: They will become familiar with the theory and method of solving a second order linear homogeneous and nonhomogeneous equation with constant coefficients. CO7: They will learn to find out a series solution for homogeneous equations with variable coefficients near ordinary points. CO8: Students acquire the knowledge of solving a differential equation using Laplace method which is especially suitable to deal with problems arising in engineering field. CO9: Students learn the technique of solving partial differential equations using the method of separation of variable
	GRAPH THEORY CO1: understand and apply the fundamental concepts in graph theory. CO2: apply graph theory based tools in solving practical problems. CO3: improve the proof writing skills. CO4: analyze properties of graphs. CO5: understand trees and their properties. CO6: distinguish between Eulerian and Hamiltonian graphs. CO7: analyze planar graphs.
	MATHEMATICS -1 CO1: the students learn the fundamental ideas of limit, continuity, and differentiability CO2: the students learn increasing and decreasing functions, local maxima, minima, concavity, and inflection points CO3: the students learn how to apply these ideas in drawing the graphs of functions CO4: the students learn to find the solution of maximum-

	minimum problems using the idea of derivatives CO5: the students learn The Mean Value Theorem and L'Hospital rule CO6: the students learn Riemann sums CO7: the students learn Fundamental Theorem of Calculus and proof CO8: the students learn to solve the area problem, the problem of finding the arc length of a plane curve, and volume of solids CO9: the students learn Average values and the Mean Value Theorem for integrals
	MATHEMATICS - 2 CO1 : students will be able to represent points in polar coordinates and convert from one system to another CO2: students will be able to do the graphing in polar coordinates CO3: students will be able to find the derivatives and anti derivatives of hyperbolic and inverse hyperbolic functions CO4: students will be able to find the arc length and surface area of revolution using definite integrals CO5: students will be able to find the improper integrals CO6: students will be able to find the limit of sequences CO7: students will be able to find the integral using the trapezoidal rule and Simpson's rule CO8: students will be able to find the convergence and divergence of series CO9: students will be able to solve a system of linear equations using matrix theory CO10: students will be able to to find the rank and inverse of a matrix using elementary row transformations CO11: students will be able to find the eigen values and the corresponding eigen vectors of a matrix CO12: students will be able to to check whether a matrix is diagonalizable or not
	MATHEMATICS - 3 CO1 : students will be able to work on the idea of limit, continuity, and derivative of vector-valued functions CO2: students will be able to use partial derivatives to find the tangent plane and normal line to a point on a surface CO3: students will be able to understand the properties and applications of the gradient of a function CO4: students will be able to apply double integral and triple integral to find the mass of a lamina, center of mass, etc. CO5: students will be able to evaluate curl and divergence of a vector field CO6: students will be able to understand line integral, surface integral, and triple integral CO7: students will be able to learn the three important theorems: Green's theorem, Gauss's theorem, and Stokes's theorem and their applications CO8: students will be able to learn about harmonic functions and their relation with analytic functions

	CO9: students will be able to understand the definition and evaluation of complex integral CO10: students will be able to learn the fundamental results on contour integration such as Cauchy-Goursat Theorem CO11: students will be able to understand Cauchy's integral formula and apply it to derive Liouville's theorem and the Fundamental Theorem of Algebra
	MATHEMATICS - 4 CO1 : They learn the major classifications of differential equations. CO2: They learn the conditions for the existence of solution of first and second order Initial Value Problems. CO3: They learn how to formulate a mathematical model of a physical process. CO4: They learn to solve the first order differential equations that are of linear, separable, exact, and Bernoulli's forms. CO5: They learn about the numerical method of solving a differential equation using Euler's method. CO6: They become familiar with the theory and method of solving second order linear homogeneous and non-homogeneous equations with constant coefficients. CO7: They learn the method of reduction of order to find a second solution of linear second order equation by reducing to linear first order equation. CO8: They learn the method of solution of Cauchy Euler equations. CO9: They learn about linear models and Boundary value problems. CO10: They acquire the knowledge of solving a differential equation using the Laplace method, which is useful to deal with problems in engineering. CO11: They are familiarized with the Fourier series. CO12: They learn the technique of solving partial differential equations using the method of separation of variables.

DEPARTMENT OF STATISTICS

Complimentary Courses-BSc Mathematics
Course outcome

SEMESTER	COURSE CODE	COURSE NAME	COURSE OUTCOMES
			• CO1: To able to understand basic concepts in Statistics

1	STA1C01	INTRODUCTORY STATISTICS	• CO2: Understand various Statistical organizations in India and their functions • C03: Summarize the data and use the measures of central tendency, measures of location, measures of dispersion and measures of shape • CO4: Understand the differences between regression and correlation when attempting to explain the relationship between two or more variables.. • CO5: Acquire knowledge on time series, Index numbers and calculate indices from given data.
2	STA2C02	PROBABILITY THEORY	• CO1: Understand basic concepts of probability theory • CO2: Understand and utilize the results and theorems to calculate the probability of events. CO3: learn the discrete and continuous random variables and their probability distributions including expectation and moments • CO4: Understand and utilize the concepts of bivariate random variables and their probability distributions;
3	STA3C03	PROBABILITY DISTRIBUTIONS AND	• CO1: Understand basic statistical distributions • CO2: learn about the applications of various distributions

		SAMPLING THEORY	• CO3: Explain and apply laws of large numbers and Central Limit Theorems
			• C04: To able to understand various sampling techniques
4	STA4C04	STATISTICAL INFERENCE AND QUALITY CONTROL	• CO1: Understand and apply the theory of estimation.
			• CO2: Understand and apply the testing of hypothesis.
			• C03:Understand concept about nonparametric method and some basic nonparametric tests
			• CO4: Basic knowledge in Statistical quality control

Carmel College (Autonomous), Mala

Name of Programme: Accounting & Taxation

POs		COs
PO-1	Develops communication skills and build confidence to face the challenges of the corporate world.	**SDC1AT01- BUSINESS MANAGEMENT** **Course Outcome:** • Understanding the concepts of Management and Management Levels • Understand Functions of Management • Understand Concepts of Motivation and Leadership • Bird eye view on Business Ethics • Understand and remember emerging changes in
PO-2	Enables learners to get theoretical and practical exposure in the commerce sector which includes Accounts, Commerce, Marketing, Management, Economics, Environment etc..	
PO-3	Enhances the capability of decision making at personal and professional levels.	
PO-4	Makes students industry ready and develop	

	various managerial and accounting skills for better professional opportunities	Management **SDC1AT02- INCOME TAX – 1** **Course outcome:** • Acquire the complete knowledge of basic concepts of income tax • Understand the concept of exempted incomes. • Students will apply critical thinking and problem solving skills related to taxation of individuals, flow through entities, and corporations. • Students will convert complex and technical tax terminology into language that translates to non-technical audiences. **SDC1AT03-FINANCIAL ACCOUNTING** **Course outcome:** • Apply knowledge of Generally Accepted Accounting Principles (GAAP) and managerial accounting theories to business organizations and non-profit organizations • Detailed understanding of accounting information systems, principles and concepts. • Combine practical and theoretical knowledge of financial accounting • Acquire conceptual knowledge of basics of accounting • Identify events that need to be recorded in the accounting records • Develop the skill of recording
PO-5	Strengthens their capacities in varied areas of commerce and industry aiming towards development of learners.	
PO-6	To empower students for pursuing professional courses like Chartered Accountancy, Cost and Management Accountancy, Company Secretary etc.	
PO-7	To Enhance the students talent in the field of professional accountant, direct and indirect taxation, managerial skills and communication skills.	
PO-8	To integrate knowledge, skill and attitude that will sustain an environment of learning and creativity among the students.	

		financial transactions and preparation of reports in accordance with GAAP • Equip with the knowledge of accounting process and preparation of final accounts of sole trader • Preparing financial statements in accordance with appropriate standards **SDC1AT04- OFFICE AUTOMATION TOOLS – LAB** **Course Outcome:** • Application of the MS Word Knowledge in creation of Documents • Understand Data Managing and application of the same • Remembering creation of slides and applying it on office environment and project works • Identify and apply the menus in MS-Word • Understand the components of Power point • Acquire practical knowledge of selecting and working with menus of MS Power point **SDC1AT05(P)- LISTENING AND SPEAKING SKILLS IN ENGLISH** **Course Outcome:** • To expand their vocabulary so as to enhance their proficiency in reading and listening to academic texts, writing, and speaking. • To heighten their awareness of correct usage of English grammar in writing and speaking • To attain and enhance competence in the four modes

		of literacy: writing, speaking, reading and listening • To assists a student to become a more competent, efficient, and perceptive academic reader who is able to communicate to others through writing and speaking the contents and main ideas of what is read. **SDC2AT06 -INCOME TAX – II** **Course Outcome:** • Identify and comply with the relevant provisions of the Income Tax Act as it relates to the income tax of individuals • Students will be able to compute income from salaries, house property, business/profession, capital gains and income from other sources • Students will be able to understand the various benefits/ deductions under Chap VI-A of the Income tax act, 1961 which are to be reduced from the gross total income of the assessee. • To make the students determine the net total taxable income of an assessee after reducing the deductions from the gross total income • Students will be able to compute the net total income and the total tax liability of an individual assessee considering the income from all heads of income and the deduction under Chap VI- A of the Income tax act,1961 **SDC2AT07-** **BUSINESS RESEARCH METHODS** **Course Outcome:** • Analyze a business problem and apply the research theories in

		solving the same. • R,U-Remembering and understanding main qualitative and quantitative methods of business research along with their advantages and disadvantages. • U,C-Develop research skills and help in the application of choosing sampling, measurement, questionnaire design, conducting interviews and surveys and creating a Research report. **SDC2AT08 – BUSINESS COMMUNICATION** **Course Outcome:** • Students will be able to understand the importance of communication in the business • Students will get ability to develop writing skills and presentations • Students will able to writing business proposals and letters • Students will able to understand application of business communication in self-development process. **SDC2AT09(P)- FINANCIAL ACCOUNTING USING TALLY** **Course Outcome:** • Gain an in-depth knowledge in accounting software practices using tally • Analyze Accounts with and without insurance • Familiarize with statutory features of tally and Evaluate Financial Positions using ratios • Student will learn to create company, enter accounting voucher entries including advance voucher entries, do

		reconcile bank statement, do accrual adjustments, and also print financial statements, etc. in Tally ERP.9 software • Enter the accounting transactions in computerized format and find the financial result concern. • Acquire the skill of financial decision making in a systemized manner. • Interpret the financial statements as well as evaluation of stock at the end. **SDC2AT10(Pr)- MINI PROJECT** **Course Outcome:** • Students are able to apply the theoretical knowledge to the practical business situations • Understand to prepare a project report relevant to their topic or problem • Analyzing the same methodologically making intelligent observation and offering practical suggestions. **AT11- BASIC NUMERICAL METHODS** **Course Outcome:** • Able to become professional by acquiring various soft skills needed for business success. • Explore the world of e-learning and the various consequences of Cyberspace and crimes • Application of data analysis and the role of artificial intelligence in e-business. • Apply the skills of digital marketing and e-commerce **A12 – PROFESSIONAL BUSINESS SKILSS** **Course Outtcome:**

		• Develop strong written and verbal communication skills. • Present ideas clearly and persuasively. • Develop skills in decision-making and problem solving. • Utilize technology and software tools for business operations. **SDC3AT11- INCOME TAX ASSESSMENT** **Course Outcome:** • Illustrate the taxable income and tax liability of firms, AOP & BOI. • Find the tax liability of co-operative society • Scrutinize the tax liability of HUF. • Value the taxability of Companies' income • Articulate tax planning provisions of an assesse. **SDC3AT12- MARKETING MANAGEMENT** **Course Outcome:** • Understanding of broad marketing functions in management • Understand and assess fundamental marketing concepts, consumer behavior : product, price, place, distribution • Remembering the conceptual framework for E-commerce **SDC3BF13 - MANAGEMENT ACCOUNTING** **Course Outcome:** • Preparation of financial statements and its analysis

		• Identifying cash and non cash items • Analyzing cost volume profit techniques to determine optimal managerial decisions • Outline and apply various management tools and techniques **SDC3AT14(P) - ADVANCE EXCEL – LAB** **Course Outcomes:** • Gain an in-depth knowledge in accounting using spreadsheets • Analyze Accounts using Financial Formulas • Understand usage of Macros **SDC3AT15 (P)-MARKETING MANAGEMENT –CASE STUDY** **Course Outcome:** • Improve Individual Problem Solving Skills • Describe Strategic Planning. • Understand and Explain the Market Environment. • Understanding Segmentation, Targeting market and Positioning concept and roles • Apprise theories and models of marketing management (Knowledge) • Implement different tools of marketing mix in different business situations (Skill) • Conduct preliminary market studies for assessing market conditions (Role in context) • Prepare and critically analyze professional

		marketing reports and communicate them efficiently (Self development). • Utilize knowledge learned in all previous marketing courses to develop a case analysis, market research study and marketing plan **SDC3AT16(P) DIRECT TAXATION AND TDS – LAB** **Course Outcome:** • To Compute the total income and tax liability of firms and Association of Persons • To carry out assessment of companies and determine their tax liability • To make the assessment of co-operative societies and trusts. • To Understanding about the assessment procedures, TDS and advance payment of tax and application in various situations • To learn tax planning concepts and apply the same **AT – 13 EDP** **Course Outcome:** • Generate innovative and viable business ideas. • Create a comprehensive and well-structured business plan. • Develop financial acumen for budgeting and financial forecasting. • Evaluate and mitigate potential business risks.

		• Develop the ability to pitch business ideas effectively. **AT – 14 BANKING AND INSURANCE** **Course Outcome:** • Understand the fundamental principles of banking and finance. • Learn the core functions and processes within a bank. • Understand the principles of credit risk management. • Learn about various insurance products, such as life, health, property, and casualty insurance. **SDC4AT17 – AUDITING** **Course Outcome:** • Able to handle vouching of trading transactions. • Able to verify and value assets and liabilities • Able to identify special areas audit. **SDC4AT18 COST ACCOUNTING** **Course Outcome:** • Able to select the cost according to their impact on business • Able to differentiate methods of scheduling costs per unit of production • Able to identify the specifics of different costing methods. **SDC4AT19- GOODS AND SERVICES TAX** **Course outcome:** • Will able to compute the

		assessable value of transactions related to goods and services for levy and determination of duty liability • .Identify and analyze the procedural aspects under different applicable statutes related to indirect taxation. • Understand the basic principles underlying the Indirect Taxation Statutes with reference to GST • Understand Tax treatment of GST and its classifications. **SDC4AT20(P) COST ACCOUNTING – LAB** **Course outcome:** • Analyze and evaluate information for cost ascertainment ,planning, control and decision making **SDC4AT21(P) GST LAB** **Course outcome:** • To acquire practical knowledge regarding GST • Indicate GST application, differentiation of application, and GST compliance and attendance. • Relate transaction amounts to GST liability. **SDC5AT23- E3: ORGANISATIONAL BEHAVIOR** **Course Outcome:** • Analyze and compare different models used to explain individual behavior related to motivation and rewards • Identify the process used in

		developing communication and resolving conflicts • Assess the Group dynamics and demonstrate skills required for working in groups **SDC5AT24-BUSINESS REGULATION** **Course Outcome:** • This course is designed to provide the student with knowledge of Indian legislation and demonstrate an understanding of the legal environment of business in India. • On the completion of this course, student will be able to communicate effectively using standard business and legal terminology. • The student will get the basic legal knowledge to business transactions and its enforceability in the court of law. • Upon the completion of this course, the students will be able to describe the various important Act related to business. **SDC5AT25-CORPORATE ACCOUNTING** **Course Outcome:** • Understand the concepts of accounting standards of asset, Liabilities and Revenue • Asses the Redemption procedures and get a bird's eye view on Journalising • Understand and evaluate problems related to final accounts of Banking Companies • Asses the Consolidation procedure in Group companies **SDC5AT26 BANKING &**

		FINANCIAL SERVICES **Course outcome:** • To enable learners to know basics of Banking and its Functions • To make them undersatnd about basic terminology in Banking and Finance • The learners will be able to remember and understand the various financial services • They will be able to apply financial concepts, theories and tools and will be in a position to evaluate the legal, ethical and economic environment related to financial services. **SDC5AT27- ACCOUNTING STANDARDS** **Course Outcome:** • Understand the concepts of accounting standards • Understand the concepts of accounting bodies • Theoretical clarity on selected standards • Provides an in-depth analysis of the accounting and disclosure requirement under IFRS. • Enables the participants to understand the IFRS framework in comparison with the Indian financial reporting requirements (Indian GAAP) and explain the differences £ in Indian GAAP and IFRS **SDC5AT28-E4- HUMAN RESOURCE MANAGEMENT** **Course Outcome**: • Contribute to the development, implementation and evaluation of employee recruitment, selection,

		and retention plans and processes • Develop implement and evaluate employee orientation, training and development programs. **SDC5AT29(P) PEACHTREE- LAB** **Course Outcome:** • Gain an in-depth knowledge in accounting software practices using Peachtree. • Able to process payments • Able to produce purchase orders and financial reports. **SDC5AT30(P) PAYROLL MANAGEMENT** **Course Outcome:** • The student will develop personnel and payroll records that provide the information required under current laws and process payroll data and tax data and prepare reports. • Able to Understand payroll procedures, taxing entities, and reporting requirements of local, state, and federal taxing authorities in a manual and computerized environment. • Prepare payroll reports containing gross taxable compensations, common withholdings, net pay amounts, and do the related accounting in a non-automated system. • Prepare payroll reports and form filings in compliance with government regulations. • Use a basic payroll system to determine employer's and employees' taxes to be paid. • Identify the methods of submission of payments in a non-automated system.

	Semester	Course code	Course/topic name related
Employability	**I**	**SDC1AT01**	**Business Management**
	I	**SDC1AT02**	**Income Tax – I**
	I	**SDC1AT03**	**Financial Accounting**
	I	**SDC1AT04(P)**	**Office Automation Tools-Lab**
	I	**SDC1AT05(P)**	**Listening and Speaking Skills in English**
	II	**SDC2AT06**	**Income Tax – II**
	II	**SDC2AT09(P)**	**Financial Accounting using Tally – Lab**
	III	**SDC3AT11**	**Income Tax Assessment**
	III	**SDC3AT12**	**Marketing Management**
	III	**SDC3AT13**	**Management Accounting**
	III	**SDC3AT14(P)**	**Advance Excel – Lab**
	III	**SDC3AT15(P)**	**Marketing Management – Case Study**
	III	**SDC3AT16(P)**	**Direct Taxation and TDS – Lab**
	IV	**SDC4AT17**	**Auditing**
	IV	**SDC4AT18**	**Cost Accounting**
	IV	**SDC4AT19**	**Goods and Service Tax**
	IV	**SDC4AT20(P)**	**Cost Accounting – Lab**
	IV	**SDC4AT21(P)**	**GST – Lab**
	IV	**SDC4AT22(Pr)**	**Internship for one month**

PART A

	V	**SDC5AT25**	**Corporate Accounting**
	V	**SDC5AT26**	**Banking and Financial Services**
	V	**SDC5AT27**	**Accounting Standards**
	V	**SDC5AT28 E5**	**Human Resource Management**
	V	**SDC5AT29(P)**	**Peachtree – Lab**
	V	**SDC5AT30(P)**	**Payroll Management – Lab**
	VI	**SDC56AT33(Pr)**	**Internship**
Entrepreneurship	**IV**	**A13**	**EDP**
Skill Development	**I**	**SDC1AT04(P)**	**Office Automation Tools-Lab**
	I	**SDC1AT05(P)**	**Listening and Speaking Skills in English**
	II	**SDC2AT08**	**Business Communication**
	II	**SDC2AT09(P)**	**Financial Accounting using Tally – Lab**
	II	**SDC2AT10(Pr)**	**Mini Project Work**
	III	**SDC3AT12**	**Marketing Management**
	III	**SDC3AT14(P)**	**Advance Excel – Lab**
	III	**SDC3AT16(P)**	**Direct Taxation and TDS – Lab**
	IV	**SDC4AT19**	**Goods and Service Tax**
	IV	**SDC4AT20(P)**	**Cost Accounting – Lab**
	IV	**SDC4AT21(P)**	**GST – Lab**
	V	**SDC5AT29(P)**	**Peachtree – Lab**
	V	**SDC5AT30(P)**	**Payroll Management - Lab**
Professional Ethics	**I**	**SDC1AT01**	**Business Management**
	IV	**SDC4AT17**	**Auditing**
	V	**SDC5AT23 - E3**	**Organizational Behavior**
	V	**SDC5AT24**	**Business Regulation**
	V	**SDC5AT27**	**Accounting Standards**
Gender	**-**	**-**	**-**
Human Values	**V**	**SDC5AT27**	**Human Resource Management**
Environment	**-**	**-**	**-**
Sustainability	**II**	**SDC2AT07**	**Business Research Methods**
	II	**SDC2AT10(Pr)**	**Mini Project Work**
	III	**SDC3AT12**	**Marketing Management**
	III	**SDC3AT15(P)**	**Marketing Management – Case Study**
	IV	**SDC4AT17**	**Auditing**
	IV	**SDC4AT22(Pr)**	**Internship for one month**
	VI	**SDC6AT32(P)**	**Project**
	VI	**SDC6AT33(Pr)**	**Internship**

CARMEL COLLEGEAUTONOMOUS MALA

Name of theProgramme –B.Voc Agriculture

<table>
<tr><th>Programme Outcomes</th><th>Course Outcomes</th></tr>
<tr><td rowspan="7">PO-1To impart first hand knowledge on agriculture and allied sciences

PO-2 Understand the impact of the professional agricultural solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.

PO-3 To demonstrate research based knowledge of the legal and ethical environment impacting agriculture organizations and exhibit an understanding and appreciation of the ethical implications of decisions.

PO-4 To demonstrate an understanding of and appreciation for the importance of the impact of globalization and diversity in modern agriculture organizations. Understanding of globalization, and NGO working.

PO-5To understand and analyze the current events and issues that are occurring in agriculture and how they affect futuristic agriculture.

PO-6 To understand and analyze the current events and issues that are occurring in agriculture and how they affect futuristic agriculture.

PO-7 Able to recognize and examine the relationships between inputs and outputs in their agricultural field to make effective and profitable decisions. To understand mechanics of a agripreneurship</td><td>SEMESTER –I

Course No:1.4
Course Code:SDC1AG01
Course Name:Fundamentals of Agronomy</td></tr>
<tr><td>Course Outcomes
CO1: Describe the importance of agriculture in India and Kerala.
CO2: To understand the agricultural classification of crops
CO3: Explain the Soil productivity and fertility
CO4: Describe the crop nutrition and nutrient cycling through manures and fertilizers.
CO5: Explain the Integrated Nutrient Management.
CO6: Explain the irrigation and irrigation methods.</td></tr>
<tr><td>Course No:1.5
Course Code:SDC1AG02
Course Name:Fundamentals of Horticulture</td></tr>
<tr><td>Course Outcomes</td></tr>
<tr><td>CO1: Describe the definition, importance, division and classification of horticultural crops
CO2: Explain the layout, planting systems and management practices in an orchard
CO3: Describe the training and pruning in horticultural crops
CO4: Describe the fruit drop and seedlessness in horticultural crops..
CO5: Describe the different types of plant propagation methods
CO6: Describe the components of nursery and its various aspects.

Course No:1.6
Course Code:SDC1AG03
Course Name :Fundamentals of Soil Science</td></tr>
</table>

	Course Outcomes CO1:Understand the fundamentals and principles of Soil Science CO2:Explain how different soils are formed and how does soils act as a medium for plant growth. CO3:Explain soils of India and Land use capability, soil pollution and its effect on crop and mitigation of soil pollution CO4: Analyze the soils for basic physical, physico-chemical & chemical properties **Course No:1.7** **Course Code:SDC1AG04(P)** **Course Name:Fundamentals of Agronomy and Horticulture –Practicals.** **Course Outcomes** CO1- Identification of cereals and millets, pulses, and tuber crops. CO2. Explain the different methods of sowing; direct seeding: broadcasting, dibbling and drilling-transplantation. CO3. Describe the seed treatment - Rhizobium inoculation of leguminous crops CO4. Identification of manures and fertilizers and their preparation CO5- Explain the fertilizer recommendation and calculation for major cereals and pulses CO6. Fertilizer recommendation and calculation for major cereals and pulses CO7-Familiarization with green manure crops and cover crops, Different planting systems and layout and the propagation methods. **Course No:1.8** **Course Code:SDC1AG05(P)** **Course Name-Fundamentals of Soil Science – Practicals.** **Course Outcomes** CO1- Identification of soil properties for crop production

	CO2- How to collect and prepare soil sample CO3. Describing the methods of determination of different nutrient contents in soil. **SEMESTER-II** **Course No:2.4** **Course Code:SDC2AG06** **Course Name:Plantation Crops,Spices and Fruits.** **Course Outcomes** CO1- Explain the importance - area, production ,origin, distribution of plantation crops. CO2:Students will get knowledge on technical cultivation techniques of different fruits and plantation crops. CO3:Students will able to identify different practical issues related to fruits and plantation crops CO4: Analyze the propagation, planting, irrigation ,and manuring of Coconut and Rubber. **Course No:2.5** **Course Code:SDC2AG07** **Course Name:Fundamentals of Seed Technology.** **Course Outcomes** CO1:Core competency in the subject & comparative evidence on development of seed. CO2:High analytical ability in understanding the application of scientific principles and students will acquire skills & handling operations of different equipments in seed science laboratory CO3:Develop an understanding of seed development, germination,vigour,deterioration and the relationship between laboratory tests and field

	performance CO4:Understand seed increase systems, seed testing and the laws and regulations related to marketing high quality seed. **Course No:2.6** **Course Code:SDC2AG08(P)** **Course Name:Plantation Crops,Spices and Fruits –Practicals.** **Course Outcomes** CO1: Demonstrate preparation and application of plant growth regulators to the crops, etc. Investigate the various problems with the production technology of fruit and plantation crops such as disorder, diseases and pests, etc. CO2: Distinguish different fruits and plantation crops, symptoms of disorders, diseases, insects and pests, etc. CO3: Discuss various concepts of high density planting, new techniques of high density planting, plant propagation, seed propagation, etc. CO4: Acquaint the knowledge on the method of field preparation for crop production and arrange the resources required in the field. CO5: Apply the production techniques of crops in the practical crop production field. CO6: Examine the production of sown crops in the practical crop production field. **Course No:2.7** **Course Code:SDC2AG09(P)** **Course Name:Fundamentals of Seed Technology-Practicals.**

	Course Outcomes CO1: Acquaint with scope and importance of seed technology in agriculture and the role of officials and legislation, seed act and seed order in quality seed production CO2: Able to learn the main steps in seed production and certification. CO3: To learn about the important chemical components of seeds and their importance as source of human food and germinating embryo after planting CO4: Develop an understanding of various seed production techniques for different field crops, the importance of maintenance of purity of crop varieties, and factors causing deterioration of variety. CO5: Execution of various phases of seed certification, field inspection, and seed purity testing CO6: Analyze the factors related to genetic and physical purity of seed and its health status of seeds of a variety during seed processing. **Course No:2.8** **Course Code:SDC2AG10(Pr)** **Course Name :Internship/Project (Cultivation of Crops).** **Course Outcomes** CO1: Acquaint with the knowledge of principles of crop planning and selection of crop. CO2:Developed the field experience on raising of crops in their field with special emphasis on the

	agronomic management of the crop. CO3:familiarized with the calculation of economics of crop cultivation CO4:Demonstrate the ability to apply the scientific method to problems in crop. **SEMESTER –III** **Course No. 3.3** **Course Code: SDC3AG11** **Course Title: Plant Tissue Culture and Biotechnology**. **Course Outcomes** CO1- Describe the principles and techniques of plant tissue culture . CO2- Explain the Tissue culture medium. CO3- Describe the preparation of explants and different methods of micropropagation . CO4- Explain the different phases of micropropagation CO5- Explain the methods and applications of tissue culture . CO6- Describe the recombinant DNA Technology. CO7- Explain the cloning vectors and PCR . CO8- Describe the different methods of gene transfer. **Course No. 3.4** **Course Code: SDC3AG12** **Course Title: Integrated Pest Management in Crops.** **Course outcomes** CO1- Describe the concepts, principles and tools of IPM . CO2- Explain the different types of IPM Methods .

	CO3- Describe the important groups of micro organisms used in insect pest control. CO4- Explain the mass multiplication techniques of important biocontrol agents. **Course No. 3.5** **Course Code: SDC3AG13** **Course Title: Fundamentals of Agricultural Engineering** **Course outcomes** CO1- Describe the irrigation with definition and objectives CO2-Explain the methods of irrigation and their engineering aspects CO3- Describe the agronomic techniques to improve water use efficiency CO4-Describe the soil erosion and its relative aspects CO5-Describe the water harvesting techniques - in situ and ex situ methods CO6- Explain surveying: survey equipment, chain survey, cross staff survey, plotting procedure, calculations of area of regular and irregular fields. **Course No. 3.7** **Course Code: SDC3AG15 (P)** **Course Title: Micropropagation of plants-Practicals** **Course outcomes** CO1-Explain the requirements for Plant Tissue Culture laboratory and media components and preparations. CO2- Describe the preparation and sterilization of media and aseptic manipulation and inoculation of various explants CO3- Explain the micro propagation of important

	crops CO4- Describe the preparation of synthetic seeds CO5- Explain the demonstration of anther culture and embryo culture. **SEM IV** **Course No. 4.3** **Course Code: SDC4AG17** **Course Title: Protected Cultivation of Horticultural Crops.** **Course outcomes** CO1- Describe the introduction, scope and important of problems and prospects of protected culture in India CO2- Explain the basic considerations in establishment and operation of greenhouses CO3- Explain the environmental control systems in green house. CO4- Describe the type of containers used in protected culture . CO5- Explain the use of substrate and preparation of substrate for protected cultivation. CO6- Describe the Crop regulation. CO7- Explain the harvesting methods. **Course No. 4.4** **Course Code: SDC4AG18** **Course Title: Weed Management and Fodder Crop Production** **Course outcomes** CO1- Explain the classification, propagation and dissemination of weeds CO2- Describe the Integrated weed management CO3- Describe the herbicide classification,

	formulations, methods of application. CO4- Describe the soil and climatic requirement , varieties, cultural practices , harvesting and postharvest off major oil crops CO5- Explain the Crop Production in rice CO6- Describe the mechanised farming in rice CO7- Describe the cultivation and management of fodder crops. **Course No. 4.5** **Course Code: SDC4AG19** **Course Title: Livestock Farming**. **Course Outcomes** CO1- Describe the role of Livestock in National economy CO2- Describe the general management Practices in Dairy farming. CO3- Describe the cattle and buffalo management . CO4- Explain the general management practices. CO5- Explain the dairy development in India. CO6- Describe the composition of milk, Constituent of Milk, Factors affecting Quality and Quantity of milk, Nutritive value , and Physico-chemical properties of milk. CO7- Describe the poultry management CO8- Detailed study of major animal diseases. **SEM V – Course Outcomes-NIL** **SEM VI-Course Outcomes-NIL**

Department of BFSI

POs		Cos
PO1 PO2 PO3 PO 4 PO5	The B.Voc. programme is focused on universities and colleges providing undergraduatestudies which would also incorporate specific job roles and their NOSs along with broad based general education. This would enable the graduates completing B.Voc. to make a meaningful participation in accelerating India's economy by gaining To provide judicious mix of skills relating to a profession and appropriate content of General Education. To ensure that the students have adequate knowledge and skills, so that they are work ready at each exit point of the programme. To provide flexibility to the students by means of pre-defined entry and multiple exit points	**SEMESTER 1** **SDC1BF01 Business Management** **Course Outcome** ● **Understanding the concepts of Management and Management Levels** ● **Understand Functions of Management** ● **Understand Concepts of Motivation and Leadership** ● **Bird eye view on Business Ethics** ● **Understand and Remember emerging changes in Management** **SDC1BF02 Principles and Practice of Banking** • **Various functions associated with banking** • **Practice and procedures relating to deposit and credit, documentation, monitoring and control** • **An insight into marketing of banking services and banking technology** **SDC1BF03 Financial Accounting** **Course outcome** • **Acquire conceptual knowledge of basics of accounting** • **Identify events that need to be recorded in the accounting records** • **Develop the skill of recording financial transactions and preparation of reports in accordance with GAAP** • **Describe the role of accounting**

		information and its limitations • **Equip with the knowledge of accounting process and preparation of final accounts of sole trader** • **Preparing financial statements in accordance with appropriate standards.** • **Prepare ledger accounts using double entry bookkeeping and record journal entries accordingly** **SDC1BF04 Office Automation Tools-Lab** **Course Outcome** • Application of the MS Word Knowledge in creation of Documents • Understand Data Managing and application of the same • Remembering creation of slides and applying it on office environment and project works • Identify and apply the menus in MS-Word • Understand the components of Power point • Acquire practical knowledge of selecting and working with menus of MSPowerpoint **SDC1BF05(P) Listening and Speaking Skills in English** **Course Outcome** • **To expand their vocabulary so as to enhance their proficiency in reading and listening to academic texts, writing, and speaking.** • **To heighten their awareness of correct usage of English grammar in**

		writing and speaking • **To attain and enhance competence in the four modes of literacy: writing, speaking, reading and listening** • **To assists a student to become a more competent, efficient, and perceptive academic reader who is able to communicate to others through writing and speaking the contents and main ideas of what is read.** **SEMESTER II** **SDC2BF06 Banking Service Management** **Course Outcome** ● **Make aware of basic services concepts of banks** ● **Understand procedures of various lending services** ● **Remember about Precautions for banker and customers regarding various operations in banks.** ● **Analyse procedures of operating various accounts.** **SDC2BF07 Business Research Methods** **Course Outcome** • **Analyse a business problem and apply the research theories in solving the same.** • **Remembering and understanding main qualitative and quantitative methods of business research along with their advantages and disadvantages.** • **Develop research skills and help in the application of choosing sampling, measurement, questionnaire design, conducting interviews and surveys and creating a Research report**

		SDC2BF08 Organisational Behaviour **Course Outcome** • **Analyze and compare different models used to explain individual behavior related to motivation and rewards** • **Identify the process used in developing communication and resolving conflicts** • **Assess the Group dynamics and demonstrate skills required for working in groups.** **SDC2BF09(P) Financial Accounting using Tally** **Course Outcome** • **Gain an in depth knowledge in accounting software practices using tally** • **Analyse Accounts with and without insurance** • **Familiarize with statutory features of tally and Evaluate Financial Positions using ratios** **SDC2BF10(Pr)- Mini Project work** **Course Outcome-Nil** **SEMESTER III** **SDC3BF11 Life Insurance Operations** **Course Outcome** • **To Impart the knowledge of the principles of Life Insurance and their importance.** • **To give exposure to the provisions of fire and Marine Insurance and their increasing importance.** • **To provide skill and knowledge to become an insurance Agent.** • **To understand various rules and**

		regulations required for insurance business **SDC3BF12 Banking and Financial Services** **Course Outcome** • **To enable learners to know basics of Banking and its Functions** • **To make them understand about basic terminology in Banking and Finance** • **The learners will be able to remember and understand the various financial services** • **They will be able to apply financial concepts, theories and tools and will be in a position to evaluate the legal, ethical and economic environment related to financial services.** **SDC3BF13 Management Accounting** **Course Outcome** • **Preparation of financial statements and its analysis** • **Identifying cash and non cash items** • **Analyzing cost volume profit techniques to determine optimal managerial decisions** • **Outline and apply various management tools and techniques** **SDC3BF14(P) Advanced Excel Lab** **Course Outcome** • **Gain an in-depth knowledge in accounting using spreadsheets** • **Analyse Accounts using Financial Formulas** • **Understand usage of Macros** **SDC3BF15(P) Financial Analysis and**

		Budgetary Control Lab **Course Outcome** • **Acquiring skills of making various financial statements by making use of software.** **SDC3BF16(P) Life Insurance Lab** **Course Outcome** ● **Familiarize with various types of life insurance policies.** ● **Procedures involved in operating various types of life insurance policies.** **SEMESTER IV** **BCM4A13 Entrepreneurship Development** **Course Outcome** ● **Familiarize the concept of entrepreneurship development programme.** ● **Assess the institutional support and incentives to the entrepreneurs** ● **Learn more about MSME** ● **Acquire the knowledge about how to set up the industrial unit.** ● **Remembering the preparation of project report.** **BCM4A14 Banking and Insurance** **Course Outcome** ● **Give a basic idea about the banking and its functions.** ● **An insight into the different types of negotiable instruments.** ● **Gain an in-depth knowledge in e banking.**

		• **Familiarize the laws relating to insurance and the regulatory body.** **SDC4BF17Auditing** **Course Outcome** • **Understand the basics of audit** • **Able to handle vouching of trading transactions.** • **Familiarize the recent trends in auditing** • **Able to verify and value assets and liabilities** • **Able to identify special areas audit.** **SDC4BF18 Banking Services and Microfinance** **Course Outcome** • **Identifying the role of microfinance** • **Identify reasons for intervening or not intervening in microfinance** • **An insight into the different models of micro microfinance** • **Learn about the financial reporting of micro finance** • **Analyse the frauds and code of conduct in micro finance** **SDC4BF19 Goods and Service Tax** **Course Outcome** • **Will able to compute the assessable value of transactions related to goods and services for levy and determination of duty liability** • **. Identify and analyze the procedural aspects under different applicable statutes related to indirect taxation.** • **Understand the basic principles underlying the Indirect Taxation**

		Statutes with reference to GST ● **Know about the levy and collection of tax** ● **Understand Tax treatment of GST and its classifications.** **SDC4BF20(P) Microfinance Operations Lab** **Course Outcome** ● **Identifying the role of microfinance** ● **Identify reasons for intervening or not intervening in microfinance** **SDC4BF21(P) GST Lab** **Course Outcome** ● **To acquire practical knowledge regarding GST** ● **To study voucher entries** **SDC4BF22(Pr)-Internship/Mini project for one month** **Course outcome-Nil** **Semester V** **GEC5HR11: (BC3C03) Human Resource Management** **Course Outcome** ● To familiarize the students with the different aspects of managing human resources. ● To equip the students with appropriate knowledge and skills required for acquisition, development and retention of human resources. **SDC5BF12 Banking Services and Micro Finance** **Course Outcome** ● Attainment of competence in the profession of banking and finance ● Practical knowledge regarding the legal

		aspects of banking ● Gain an in-depth knowledge in banking related laws ● Familiarize the commercial laws with reference to banking operations **SDC5BF25 Corporate Accounting** **Course Outcome** ● Understand the concepts of accounting standards of asset, Liabilities and Revenue ● Asses the Redemption procedures and get a bird's eye view on Journalizing ● Understand and evaluate problems related to final accounts of Banking Companies ● Asses the Consolidation procedure in Group companies **SDC5BF26 Retail Banking** **Course Outcome** ● To enable learners to know basics of Retail Banking ● To make them aware about basic terminology and activities in Retail Banking ● Give an insight into the products and services in retail banking ● Learn about the operations in retail banking ● Understand the issues faced by retail banks **SDC5BF27 Cost Accounting** **Course Outcome** ● Able to select the cost according to their

		impact on business ● Understand the material management ● Able to differentiate methods of schedule costs per unit of production ● Able to identify the specifics of different costing methods. ● Familiarize the cost control techniques **SDC5BF28 E4:Human Resource Management** **Course Outcome** ● An insight into the basics of Human resource management ● **Contribute to the development, implementation and evaluation of employee,recruitment,selection, and retention plans and processes** ● Develop the knowledge about the placement in an organization ● Develop implement and evaluate employee orientation , training and development programs. ● Analyze the process of compensation and grievance redressal in organization **SDC5BF28E5: Risk Management and Insurance** **Course Outcome** ● Demonstrate knowledge of the range of financial and financial related risks facing organizations ● Understanding various risks and how to manage it ● Analyze the risk management

		applications ● Able to know the risk management environment ● Remembering the risk management applications in life **SDC5BF29(P) Peachtree** **Course Outcome** ● Gain an in-depth knowledge in accounting software practices using Peachtree. ● Able to process payments ● Able to produce purchase orders and financial reports. **SDC5BF30(P) Cost Accounting-Lab** **Course Outcome** ● Analyze and evaluate information for cost ascertainment, planning, control and decision making **Semester VI** **SDC6BF31 Term Paper** Course Outcome-Nil **SDC6BF32 Project** Course Outcome-Nil **SDC6BF33 Internship** Course Outcome-Nil

	Semester	Course code	Course/topic name related
Employability	**I**	**SDC1BF01**	**Business Management**
	I	**SDC1BF02**	**Principles and Practices of Banking**
	I	**SDC1BF03**	**Financial Accounting**
	I		
	I	**SDC1BF04(P)**	**Office Automation Tools-Lab**
		SDC1BF05(P)	**Listening and Speaking Skills in English**
	II	**SDC2BF06**	**Banking Service Management**
	III	**SDC2BF09(P)**	**Financial Accounting using Tally – Lab**
	III	**SDC3BF11**	**Life Insurance operations**
	III	**SDC3BF12**	**Banking and Financial Services**
	III	**SDC3BF13**	**Management Accounting**
	III	**SDC3BF14(P)**	**Advance Excel – Lab**
	III	**SDC3BF15(P)**	**Financial Analysis and Budgetary Control Lab**
	IV		
	IV	**SDC3BF16(P)**	**Life Insurance – Lab**
	IV	**SDC4BF17**	**Auditing**
		SDC4BF18	**Banking Services and Micro Finance**
	IV	**SDC4BF19**	**Goods and Service Tax**
	IV	**SDC4BF20(P)**	**Micro Finance Operations – Lab**
	IV	**SDC4BF21(P)**	**GST – Lab**
	IV	**SDC4BF22(Pr)**	**Internship for one month**
	V	**GECHR11**	**Human Resource Managment**
	V	**GRC5AD12**	**Banking and Micro Finance**
	V	**SDC5BF19**	**Mutual Fund Operations**
	V	**SDC5BF20**	**Legal and Regulatory aspects of banking**
	VI		
		SDC5BF21	**Corporate Accounting**
		SDC5BF22	**Micro Finance Operations- Lab& PSC Coaching**
		SDC5BF23	**Mutual fund and online share Trading - Lab**
		SDC6BF24(Pr)	**Internship&Project**
Entrepreneurship	**IV**	**A13**	**EDP**
Skill Development	**I**	**SDC1BF04(P)**	**Office Automation Tools-Lab**
	I	**SDC1BF05(P)**	**Listening and Speaking Skills in English**
	II	**SDC2BF09(P)**	**Financial Accounting using Tally – Lab**
	II	**SDC2BF10(Pr)**	**Mini Project Work**
	III	**SDC3BF14(P)**	**Advance Excel – Lab**
	III	**SDC3BF15(P)**	**Financial Analysis and Budgetary Control - Lab**

	IV **IV** **IV** **V** **V**	**SDC4BF19** **SDC4BF20(P)** **SDC4BF21(P)** **SDC5BF22** **SDC5BF23**	**Goods and Service Tax** **Micro Finance Operations - Lab** **GST- Lab** **Micro Finance Operations- Lab&** **PSC Coaching** **Mutual fund and online share** **Trading - Lab**
Professional Ethics	**I** **II** **IV** **V**	**SDC1BF01** **SDC2BF08** **SDC4BF17** **SDC5BF20**	**Business Management** **Organizational Behaviour** **Auditing** **Legal and Regulatory aspects of banking**
Gender	**-**	**-**	**-**
Human Values	**V**	**GECHR11**	**Human Resource Management**
Environment	**-**	**-**	**-**

B.Voc FASHION TECHNOLOGY

POs	**COs**
PO-1 Apply various techniques of fashion designing that impact in our daily life. PO-2 Demonstrate innovative approaches to fashion built on knowledge and awareness of the system. PO-3 Forecast the style and designs that can be implemented in various textile materials and perform analysis on textile material using the different tools and methods learned. PO-4 Undergoing internships making the students industry background strong. PO-5 Entrepreneur the possibility of visual merchandising.	**SDC1FT01 - Basics of Textiles** • Gives detailed introduction on textiles fibers, their properties and structure • Explains about the textile yarn, its classification, manufacturing process and properties • Describes the weaving process and its types, also about Loom and its types. • Explains about the Knitting process, its types and diagrams • Describes about Nonwoven, its types, and manufacturing methods **SDC1FT02 – Design Concepts** • Describe and identify different art medias and its application • Describe the concepts related to the various fashion processes • Describe the elements and principles of design • Explain the color theory and dimensions of color

PO-6 Understand the various aspects of fashion technically and thus becomes a graduate in fashion. PO-7 Improving the student's knowledge on fashion through practical labs.	• Introduce and describe the Fashion illustration and its importance **SDC1FT03 (P) – Pattern Making – I –Lab** • Drafting the basic pattern set • Describe and manipulate the darts using different methods **SDC1FT04(P) – Basics of Fashion Illustration – Lab** • Give a basic knowledge about drawing Learn about different mediums used for illustration • Learn to draw fashion croquies **SDC1FT05 (P) – Garment Construction – I – Lab** • Develop stitching practice on paper and muslin • Practice the different kinds of seams, seam finishes, hem finishes, tucks and pleats • Practice the application of zippers, plackets and fasteners **SDC2FT06 – Apparel Machinery and Equipment** • Gives introduction on apparel industry and details regarding fabric spreading • Descriptions regarding cutting machines • Explains about the sewing machine classification and other important details • Describes about the sewing mechanism in detail • Explains about the stitches and seams in detail. **SDC2FT07 - History of Indian Costume** • Describe the origin & functions of clothing. • Explain the Costumes of ancient Indian civilizations • Describe the Costumes, hairstyles and headgears and jewellery of various Indian Empires **SDC2FT08 (P) – Fashion Illustration – Lab** • Study about different perspective drawings and ornaments and accessories. • Study on different fashion figures • Study on various style features and silhouettes **SDC2FT09 (P) – Pattern Making – II – Lab** • Drafting patterns of Basic Bodice • Drafting patterns of various types of Skirts • Drafting pattern of different types of Sleeves and collars

	SDC2FT10(Pr) – Internship/ Mini project • Designing the garments by self • Draft patterns according to designs • Construct the garments • Embellish the garments **A11 – BASIC MATHEMATICS AND GENERAL AWARENESS** • Apply numerical and reasoning skills in competitive examinations; • Understand some basic concepts of research and its methodologies; • Bridge the fundamental skills of computers with the present level of knowledge of the students; • To train and equip the students with the skills of modern banking and insurance. **A12 - PROFESSIONAL BUSINESS SKILLS** • Able to become a professional by acquiring various soft skills needed for business success • Explore the world of e -learning and also the various consequences of cyberspaces and crimes • Application of data analysis and the role of artificial intelligence in e- business. • Apply the skills of digital marketing and E-commerce. **SDC3FT11-History of Indian Textiles** • Describe various costumes of different states of India • Explain traditional textiles and design techniques of India • Explain traditional embroideries of India • Describe regional consumes of Indian states **SDC3FT12- Fashion Marketing** • Explains fashion marketing in India • Describes the concepts of marketing and types • Explains the different kinds marketing strategies • Describes marketing, marketing mix, marketing research and buying behaviour • Describes Fashion Marketing, marketing concepts, and marketing managements **SDC3FT13 -Textile Processing** • Introduction on textile wet processing Different types of dyeing processes • Introduction to textile printing

	• Study on various textile printing methods • Explains various textile finishing processes **SDC3FT14 (P) Fashion Styling and Makeup** • Describe the Fashion styling • Explain the Fundamentals of Makeup, Hair Styling • Explore the beauty and skin care • Doing makeup on the basis of a selective theme • Explore various hair styling and hair dressing **SDC3FT15 (P) -Textile Processing** • Block printing and screen printing • Textile dyeing using direct dyes. reactive dyes, vat dyes and sulphur dyes • Learns to bleaching of cotton • Learns to Scouring of cotton • Learns to desize of cotton **SDC3FT16 (P) - Garment Construction-II – Lab** • Learns to construct different sleeves • Learns to construct different collars • Learns to construct various skirts **A13 - ENTREPRENEURSHIP DEVELOPMENT** • Able to understand the nature of Entrepreneurship and the financial assistance and guidance from government • Confirm and entrepreneurial business data • Explore entrepreneurial leadership and management style • Confidence in setting up of industrial unit **A14 - PUBLIC HEALTH, SANITATION & SAFETY** • After learning the course, the students should be able to: • Identify the diseases associated with occupation • Identify the hazard in industrial area and propose preventive measures • Manage safety in industries and propose safety measures and PPE • Demonstrate the hygiene and sanitation procedures • Demonstrate the microorganism responsible for the disease and their control **SDC4FT17- Apparel Production and Quality Control**

	• Gives detailed description on certification in apparel industry • Explain about quality parameters of yarn and fabric and describe the term inspection • Understand the terms of quality control and explain various international standards • Describe the process in fabric department • Gives a detailed description on various departments of apparel industry **SDC4FT18-Traditional Western Costumes** • Learns about traditional costumes and accessories of different western countries • Studies about various Asiatic empires **SDC4FT19-World Art Appreciation** • Identify and describe the elements and principles of art • Explains about different kinds of Indian and western paintings • Explains about modern art **SDC4FT20 (P) – Draping** • Understand basic principles and tools of draping • Interpret the basic dress foundation • Analyze dart manipulations and explore dart equivalents • Drape different kinds of necklines and sleeves • Explore bodice style an skirts **SDC4FT21 (P) Surface Ornamentation** • Detailed study on various embroidery stitches • Study on traditional embroideries □ • Other surface ornamentation techniques like smocking, fabric painting etc. **SDC4FT22 (Pr)-Project/Internship** • Theme based garment designing □ • Creation of theme board (handmade) □ • Illustration of the garment (on croquis and flat sketch) □ • Drafting and construction of the selected design **SDC5FT23 (E1)- Home Textile** • Gives detailed introduction to home furnishing textiles □ • Explains about different floor coverings and its uses □ • Explains about different bedroom linen

	• Gives a brief idea about different type of window treatments used **SDC5FT23 (E2) - Fashion Forecast for Indian Retail** • To study the growing Indian retail market in the context of fashion business • Analyze the fashion trend with help of fashion forecasting tools • Survey and predict the right color and material for any season • Articulate the concepts, mood and develop color palettes **SDC5FT23 (E3)- Corporate Designs and Fashion Industry** • Learns to design and develop logo □ • Learns to develop plan and run own business • Learns innovative modes of advertising and communication **SDC5FT24 Fashion Retail Management** • Explain about fashion retailing □ • Give an explanation to Retailing □ • Describe various steps in Store Management and its types, objectives • Explain Store Design and Display □ • Describe retail market strategy **SDC5FT25-Garment Finishing and Clothing Care** • Study on the hardness & softness of water and regarding the soaps & detergents • Explains about the various stiffening agents • Study on various laundry & ironing equipment • Describes about the washing process and washing equipment • Study on special laundry items and stains **SDC5FT26 (E4) - Fabric Manufacturing Techniques** • Gives knowledge about different types of weave structure • Learns to set sample looms and weave **SDC5FT26 (E5)- Advanced Pattern Making & Grading** • Learns to develop advanced pattern and grading techniques • Understand the basic principles of grading • Explains about different types of manual grading • Explains about fitting and alterations

	SDC5FT26 (E6) – Business of Fashion Luxury • Understanding the creation and positioning of brands. • Understanding the marketing and promotion policies of brands. • An understanding of the phenomenon of luxury and the socio, economic and cultural aspects associated with it. • Understanding the psyche and motivations of the luxury consumer. • Interrelationship of different facets of the luxury Industry. **SDC5FT27– Environmental Textiles** • Study on Indian textile industry • Study of environmental impacts on various sectors of textile industry • Detailed study on eco-friendly textile fibres • Explains about role of bio technology in textile sector • Study on Eco labeling **SDC5FT28 (E4) (P) – Fabric Manufacturing Techniques** • Gives knowledge about different types of weave structure • Learns to set sample looms and weave • SDC5FT28 (E5) (P) - Pattern Making and Garment Construction - IV (Adult wear) • Learn to drafting and Construction of Skirt variations • Learn to drafting and Construction of Basic Kameez, Salwar, Churidar, Choli • Learn to drafting and Construction of a dress variation • SDC5FT28 (E6) (P) – Business of Fashion Luxury • Understanding the creation and positioning of brands. • Understanding the marketing and promotion policies of brands. **SDC5FT29 (P) – Computer Aided Designing (CAD)** • Practice to Create mood board and color board • Enable to create Flat sketch a Specification sheet • Practice to create various textile print • Enable to create Draping garments on croquis

	• Practice to create Accessory designing **SDC5FT30 (P) – Portfolio Presentation** • Thematic collection of 5 garments including Theme board, mood board etc. • Best presentable works done throughout the course **SDC6FT32 Project & Internship** • To familiarize the students with the different concepts and process of the apparel industry. • To make students understand the relevance, specifications and importance of quality in apparel industries. • Introduce the basic concepts related to processing and production techniques • To expose students to experience and gain knowledge about the work atmosphere on textile industry.

	Semester	Course code	Course/topic name related
Employability	**1**	SDC1FT05 (P)	Garment Construction -I
	2	SDC2FT06	Apparel machinery and Equipment
		SDC2FT10(Pr)	
	3	SDC3FT14 (P)	Internship/ Mini project
		SDC3FT16 (P)	Fashion Styling and Makeup
	4	SDC4FT17	Garment Construction-II - LAB
		SDC4FT20 (P)	
		SDC4FT22 (Pr)	Apparel Production and Quality Control
	5	SDC5FT23 (E2)	
		SDC5FT28E4 (P)	Draping
		SDC5FT28E5 (P)	Project /Internship
		SDC5FT29 (P)	Fashion Forecast for Indian Retail
		SDC5FT30 (P)	Fabric Manufacturing Techniques
		SDC6FT32	Pattern Making and Garment Construction- IV (Adult wear)
	6		Computer Aided Designing (CAD)
			Portfolio Presentation
			Internship & Project
Entrepreneurship	**1**	SDC1FT05 (P)	Garment Construction -I
	2	SDC2FT10(Pr)	Internship/ Mini project
	3	SDC3FT14 (P)	Fashion Styling and Makeup
		SDC3FT16 (P)	Garment Construction-II - LAB
	4	A13	
		SDC4FT21 (P)	Entrepreneurship Development
	5	SDC5FT28	Surface Ornamentation
		SDC5FT28E5 (P)	E1 - Home Textiles
		SDC5FT29 (P)	Pattern Making and Garment Construction- IV (Adult wear)
			Computer Aided Designing (CAD)
Skill Development	**1**	SDC1FT03(P)	Pattern Making -1 - lab
		SDC1FT04(P)	Basics of Fashion Illustration - lab
		SDC1FT05 (P)	Garment Construction -I
	2	SDC2FT08(P)	Fashion Illustration - LAB
		SDC3FT16 (P)	Garment Construction-II - LAB
	3	SDC3FT14 (P)	Fashion Styling and Makeup
		SDC3FT15 (P)	Textile Processing
	4	SDC4FT20 (P)	Draping
	5	SDC5FT28E5 (P)	Pattern Making and Garment Construction- IV (Adult wear)
		SDC5FT29 (P)	Computer Aided Designing (CAD)

Professional Ethics			
Gender			
Human Values			
Environment	**5**	SDC5FT27	Environmental Textiles
Sustainability	**5**	SDC5FT27	Environmental Textiles

DEPARTMENT OF B. VOC

Programme Specific Outcomes (PSOs) – B.Voc Multimedia Programme

	Programme specific outcomes
PSO1	The programme is a suitable option for students to develop higher levels of creativity, when it comes to image editing, video editing, animation, advanced modelling, and a lot More
PSO2	With the increasing variety and range of hardware and software used for Multimedia and Web-Site Design, the demand for the manpower in these fields has escalated. This training program has been envisaged with an objective to develop specialized manpower required for these activities.
PSO3	Student will develop multimedia skills understanding the principal players of individual players in multimedia teams in developing projects.
PSO4	Students will understand the hardware and software needed to create projects using creativity and organization to create them.
PSO5	Students will learn copyright laws associated with multimedia.
PSO6	To learn all aspects of film production from the perspective of a film producer and also the film director, To provide knowledge of all legal aspects of film production, to impart knowledge on budgeting, to help understand all business models for cinema and television for distribution and revenue generation

Course Outcomes

SEM	Course Code	Course Name	Course outcomes
I	GEC1FC02	Fundamentals of C omputer	• CO1:Understanding the concept of input and output devices of Computers and how it works and recognize the basic terminology used in computer programming
			• CO2:describe the organization and operation of a computer processor, primary and secondary memory, peripheral devices and to give computer specifications
			• CO3:Describe various types of networks network standards and communication software.
			• CO4:Identify categories of programs, system software and applications. Organize and work with files and folders.
			• CO5:Describe the usage of computers and why computers are essential components in business and society
I	SDC1MM01	Office Automation & Malayalam Computing	• CO1: 0ffice tools course would enable the students in crafting professional word documents, excel spread sheets, power point presentations using the Microsoft suite of office tools.

			• CO2:To familiarize the students in preparation of documents and presentations with office automation tools.
			• CO3:The students will be able to perform documentation, to perform accounting operations, to perform presentation skills
			• CO4:Strengthen local language; Malayalam, using the possibilities provided by Information and Communication Technologies.
I	SDC1MM02	Internet Programming	• CO1: The course will give you a grounding in the nuts and bolts of the tags, script, and code that create web pages. It will not turn you into a programmer, but it will help you understand how the web and web pages work.
			• CO2:This knowledge will allow you to build on the skills you will have and to understand the potentials and limitations placed on writing for web pages.
			• CO3:Explain how the client-server model of Internet programming works
			• CO4:Understand how CSS will affect web page creation.
I	SDC1MM03 (P)	Office Automation & Malayalam Computing(Lab)	• CO1: To familiarize the students in preparation of documents and presentations with office automation tools.
			• CO2:Students would be able to documents, spreadsheets, make small presentations and would be acquainted with internet.
			• CO3:Students in crafting professional word documents, excel spread sheets, power point presentations using the Microsoft suite of office tools. To familiarize the students in preparation of documents and presentations with office automation tools.
			• CO4:the students will be able to perform documentation, to perform accounting operations, to perform presentation skills
I	SDC1MM04 (P)	Internet Programming Lab	• CO1: Analyze a web page and identify its elements and attributes.
			• CO2:Create web pages using HTML and Cascading Style Sheets
			• CO3: Create a web page multiple types of style sheet used in a single page
			• CO4:Skill in Design and development of web-pages
II	GEC2NM06	Basic Numeric Skills	• CO1:Develops the students ability to deal with numerical and quantitative issue in business

			• CO2:Conduct basic statistical analysis of data
			• CO3:Solve problems linear equations, metrics and progressions
			• CO4:Solve statistical problems and analyze data.
II	SDC2MM05	Multimedia Tools & Techniques	• CO1:Provide an understanding of the fundamental elements in multimedia. The emphasis will be on learning the representations, perceptions and applications of multimedia.
			• CO2:Software skills and hands on work on digital media will also be emphasized
			• CO3:The students will understand the technologies behind multimedia applications and master the skills for developing multimedia projects.
			• CO4:To demonstrate how still images, sound, and video can be digitized on the computer.
II	SDC2MM06	Photography & Visual Effects	• CO1:Understanding of the industrial and commercial applications of photographic techniques
			• CO2:Create photographic images utilizing a variety of technologies and workflow processes (image capture, manipulation, output, and distribution) in alignment with conceptual/visual objectives.
			• CO3:Understand different camera modes, shots, angles, lighting, visual effects and paint effects.
			• CO4:Work as a professional, maintaining high standards of practice and apply principles of composition to produce professional images.
II	SDC2MM07 (P)	Multimedia Tools & Techniques Lab	• CO1: Students will work with all aspects of images.
			• CO2:Improving design skill for students by learning different designing softwares.
			• CO3:Develop skills for creating images, brochures, logos etc.
			• CO4:Understanding color correction, compositing, manipulation and can create their own ideas.
III	GEC3CW08	Creative writing TV and Film	• CO1: Focuses on writing and submitting both drama and screen scripts for class discussion and analysis
			• CO2:Demonstrate familiarity with the elements of drama—such as plot, character, diction, theme, and spectacle—as well as an understanding of how these elements combine to create a theatrical experience.
			• CO3:To train students with the practical skills for writing scripts

			• CO4:Students will learn how to write scene description, to describe characters and locations, and to develop dramatic conflict, climax, romance and humor.
III	GEC3ES09	Environmental Science	• CO1:Get a basic idea of environment, environment al resources and their importance.
			• CO2: Learn the interrelationship between man, soc iety & environment.
			• CO3: Learn about ecosystem and biodiversity.
			• CO4: Learn the impact of pollution and role of mankind to eradicate pollution.
III	SDC3MM09	Digital Video Production	• CO1:Learn how to combine basic design principles in video editing, cuts and transitions.
			• CO2: Develop knowledge of established field video genres and techniques, camera angles and movements.
			• CO3: Develop project ideas, treatments, and other pre-production materials, and produce an idea as a high quality finished video product
			• CO4: Master the basics of operating video field equipment (camera, audio, lighting).
III	SDC3MM10	Introduction to Animation	• CO1: Develop the knowledge of basic Animation and Introducing Adobe Flash 2D animation Software.
			• CO2: Understand more details about the working Environment of Adobe Flash.
			• CO3: Develop the knowledge of creating interactive Animation using Flash Action Script.
			• CO4: Understand more about Action script with basic programming.
			• CO5: Develop the knowledge of creating Flash Animation in Advance.
III	SDC3MM11 (P)	Animation Lab	• CO1:Understand the concept of animation and drawing perspective.
			• CO2:Understand the animation software; Adobe Flash
			• CO3: Develop the skill to create Flash Animation using Action Script.
			• CO4:Able to create Motion Animation combined with Action script using Adobe Flash.
III	SDC3MM12 (P)	Digital Video Production Lab	• CO1: Understand the video editing software; Adobe Premiere Pro

			• CO2: Understand the interface and workflow, titling, masking and exporting.
			• CO3: Edit and compress video for use in various delivery modes of digital media using standard digital video editing software.
			• CO4: Understand the conceptual and aesthetic styles, as well as their practical and technical skills.
IV	GEC4PP11	Pre-Production	• CO1:Familiarize the student with the script development and production process
			• CO2:Explain different shot types, story board, budgeting, audition and location planning
			• CO3:Describe different roles of a production crew appropriately to produce a documentary video.
			• CO4:Explain the camera angles, movements and composition principles.
IV	GEC4ED12	Entrepreneurship Development	• CO1:Familiarize the students with the concept of entrepreneurship
			• CO2:Identify and develop the entrepreneurial talents of students
			• CO3:Generate innovative business ideas in emerging industrial scenario
IV	SDC4MM13	Production and Post Production	• CO1: Analyze and discuss films of various genres and formal approaches in a range of theoretical and historical contexts.
			• CO2: Approach filmmaking practice as a means of storytelling, non-fiction narrative, and formal, technical and stylistic experimentation. Understand the professional requirements of all technical and creative roles involved in film production and post-production.
			• CO3: Demonstrate understanding of common post production techniques, standards and workflows. Student will be able to apply technical knowledge to capture, edit, monitor and compress digital video footage
			• CO4: Post-production provides the filmmaker in the following areas: picture editing, sound editing, sound mixing, music, and colour correction.
IV	SDC4MM14	Advanced Techniques In Graphics and Animation	• CO1:Familiarize the student with the Concept of 3D modeling
			• CO2:Understand 3D Animation Software Autodesk Maya in base level

			• CO3: Familiarize the student with the types and Principles of Animation
			• CO4: Understanding basic knowledge about the Animation tools in Autodesk Maya and Modeling tools.
IV	SDC4MM15 (P)	Graphics and Animation	• CO1: Familiarize the student with the Autodesk Maya Interface.
			• CO2: Familiarize them the most commonly used modeling tools in Maya.
			• CO3: Understand how to model anything in Maya.
			• CO4:Make the students familiar with camera movement, lighting and basic Rigging in Maya
V	GEC5HR13	Human Resource Management	• CO1:Understand about the role and managerial functions of a HR Manager and to learn about recruitment, training, performance appraisal and grievance system in an organization.
			• CO2:Familiarize the students with the different aspects of managing Human Resource in the Organization
			• CO3:Equip the students with appropriate knowledge and skills required for acquisition, developmentand retention of Human Resources.
V	SDC5MM17	Media Laws and Ethics	• CO1:Understand the basic legal concepts and press laws.
			• CO2:Understand ethical issues in the current media scenario
			• CO3: Demonstrate an understanding of the nature of ethics and moral discourse
V	GEC5LS15	Life Skill Education & Presentation Skill	• CO1:Develop intrapersonal, interpersonal, critical thinking, and decision making and communication skills.
			• CO2: Establish self-management and help to maintain work life balance.
			• CO3: Get an insight to career planning and development
V	SDC5MM18	Graphics and Animation in Advertising	• CO1: Demonstrate an understanding of the overall role advertising plays in the business world
			• CO2: Identify and understand the various advertising media.
			• CO3: Demonstrate an understanding of how an advertising agency operates.
			• CO4: Understand types of advertising, media andmarketing mix.
V	SDC5MM19	3D, Scripting and Game Development	• CO1: Recap Animation Principles and understand the concept of Character Modeling.

			• CO2: Make them understand different type of Animation and some most common Animation softwares.
			• CO3: Familiarize the students with the most common post production Softwares.
			• CO4: Understand them about Game Development,its process and Software used.
V	SDC5MM20 (P)	Graphics and Animation in Advertising Lab	• CO1:To learn different type of graphics like vector and raster graphics
			• CO2:To apply tools and information to create graphics for digital and print media.
			• CO3:Understand the software's Adobe Photoshop, Adobe Illustrator, Adobe Flash and Adobe In Design
			• CO4:To apply the animation principles to create animated ads.
V	SDC5MM21 (P)	3D Scripting and Game Development Lab	• CO1: Familiarize the student with some advanced modeling Techniques.
			• CO2: Understand the students to Rig and Animatea Character using Maya.
			• CO3: Understand the software's After Effects, Adobe Premier Pro and sound editing software like Adobe Audition.
			• CO4: Understand about the Game Engine and Game Development and its Process.
VI	**INTERNSHIP**		

DEGREE OF BACHELOR OF VOCATION (B.VOC) SOFTWARE DEVELOPMENT
Programme Outcomes (POs) – (B.VOC) Software Development (2021 onwards)

	Programme outcomes
PO1	Open up a channel to IT Industries by supplying sufficient work ready students by developing skilled manpower in the various areas of Information Technology like: Web Development, Database Management, Software Development, Computer Languages, Software Engineering, Mobile Applications, Multimedia Applications, etc.
PO2	Select and apply appropriate techniques, resources, mathematical and professional business skills and Modern IT Tools to complex software engineering activities and business presentations...
PO3	Identify opportunities in industries.
PO4	Equip the graduates to go for their higher studies and research.
PO5	Become an entrepreneur who can provide solutions and develop software products for Enterprise needs.

Program Specific Outcomes (PSO)

PSO1	Demonstrate understanding of the principles and working of the hardware andsoftware aspects of computer systems.
PSO2	Understand the impact of general education in the areas like Disaster Management, Gender Studies, Environmental Science, Public Health, Sanitation and Safety, Entrepreneurship, Human Rights, IPR, Consumer Protection etc. and need for sustainable development.
PSO3	Develop competent technical speaking and writing skills in English so as to enable the graduate effectively communicate in the work place.
PSO4	Develop competency in advanced programming languages such as Machine Learning, AI, Big Data, IOT, DBA, Python, J2EE, Android, Dot Net etc. and learn the development of software and web applications using these.
PSO5	Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.

Course Outcomes

Semester	Course Code	Course Name	Course outcomes
I	**SDC1IT01**	**Discrete Mathematics**	• CO-1:Understand mathematical logic and Boolean algebra.
			• CO-2:Evaluate Boolean functions and simplify expression using the properties of Boolean algebra
			• CO-3: Understand some basic properties of graphs and related discrete structures,And be able to relate to practical examples.
			• CO4-:Understand some basic properties of trees and related discrete structures.
			• CO-5: Demonstrate different traversal methods for trees and graphs.
I	**SDC1IT02**	**PROGRAMMING IN C**	• CO-1: Read, understand and trace the execution of programs written inC language.
			• CO-2: Write the C code for a given algorithm.

			• CO-3: Implement Programs with pointers and arrays, perform pointer arithmetic, and use the pre-processor.
			• CO-4:Write programs that perform operations using derived data.
			• CO-5: Choose the right data representation formats based on the requirements of the problem.
I	**SDC1IT03 (P)**	**PROGRAMMING IN C - LAB**	• CO-1: To impart adequate knowledge on the need of rogramming languages and problem solving techniques.
			• CO-2:To develop an in-depth understanding of functional and logical concepts of C Programming.
			• CO-3: Recollect various programming construct like decision making, branching and looping to develop c programs.
			• CO-4: Implement different Operations on arrays, functions, structures & unions
			• CO-5: Implement different Operations on pointers, and files.
I	**SDC1IT04 (P)**	**WEB PROGRAMMING - LAB**	• CO-1: Understand the important HTML tags for designing static pages and separate design from content using Cascading Style sheet. • CO-2: Design and develop web pages using CSS styles, internal and/or external style sheets.
			• CO-3:-Develop interactive web applications using HTML, CSS, JavaScript and XML.
			• CO-4:- To develop the ability to build efficient

			web based applications using PHP.
			• CO-5:- To learn the basic constructs in PHP Programming.
I	**SDC1IT05 (P)**	**OFFICE AUTOMATION & DESIGN LAB**	• CO-1:By learning the course, the students will be able · to perform documentation Gain proficiency in identified technical skills, understand the process of word,
			• CO -2: To create Social Media Advertisements.
			• CO- 3: To create informatics video content for presentation. To establish as an Interactive content designer for Digital media.
			• CO- 4: To designWebsite layout and elements.
II	**SDC2IT06**	**PROGRAMMING IN JAVA**	• CO-1: To Familiarize Java programming Constructs
			• CO-2: To solve the interdisciplinary applications using the Basic Principles of OOPs(Class,Object Inheritance, Polymorphism etc.) and Packages
			• CO-3: To familiarize the concepts of Threads, Synchronization, Files and facilitate students in handling exceptions.
			• CO-4: To Learn Common abstract user interface components to design GUI in Java usingApplet, AWT and Swing
			• CO-5: Apply JDBC to provide a program level interface for communicating with databases using java programming.
II	**SDC2IT07**	**RELATIONAL**	• CO-1:Describe the

		DATABASE MANAGEMENT SYSTEM	fundamental concepts of database management systems
			• CO-2: Explain the basic concepts of relational data model, entity-relationship model,relational database design, relational algebra and SQL.
			• CO-3: Improve the database design by normalization.
			• CO-4: populate relational database and formulate SQL queries on data.
			• CO-5: To learn PL/SQL Programming Constructs (Trigger,Cursor,Stored Procedure)
II	**SDC2IT08 (P)**	**PROGRAMMING IN JAVA- LAB**	• CO1: Able to write programs for solving real world problems
			• CO2: Apply the concepts of polymorphism and inheritance for problem solving in Java. Implement the concepts of packages and interfaces
			• CO3: Develop programs for exception handling, multi-threading and IO application programs
			• CO4: Design GUI applications using Applet and swing components
			• CO5: Build database connectivity programs using JDBC
II	**SDC2IT09 (P)**	**RDBMS –LAB**	• CO-1:Apply the basic concepts of Database Systems and Applications.
			• CO-2: Use the basics of SQL and Formulate queries using SQL DML/DDL/DCL Commands in database creation and interaction.
			• CO-3: Design a commercial relational database system (Oracle, MySQL) by writing SQL

			using the system.
			• CO-4: Capable to build and Manage PL/SQL Programs
II	**SDC2IT10 (Pr)**	**MINI PROJECT**	• CO-1 Acquire the basic knowledge about handling real world projects
			• CO-2: Apply academic skills in industrial circumstances
			• CO-3: Able to gain practical knowledge and implement all learning concepts in the form of an application.
III	**A11**	**BASIC MATHEMATICS AND GENERAL AWARENESS**	• CO-1:Apply numerical and reasoning skills in competitive examinations.
			• CO-2:Understand some basic concepts of research and its methodologies.
			• CO-3: Bridge the fundamental skills of computers with the present level of knowledge of the students.
			• CO-4: To train and equip the students with the skills of modern banking and insurance.
III	**A12**	**PROFESSIONAL BUSINESS SKILLS**	• CO-1: Able to become a professional by acquiring various soft skills needed for business success.
			• CO-2: Explore the world of e-learning and also the various consequences of Cyber space and crimes.
			• CO-3:Application of data analysis and the role of artificial intelligence in e-business.
			• CO-4:Apply the skills of digital marketing and e-commerce.
III	**SDC3IT11**	**SOFTWARE ENGINEERING**	• CO-1: Understand the basic concepts of software engineering techniques.
			• CO-2: Apply Techniques of Test Design.

			• CO-3: Understand Test Design Management.
			• CO-4: Analyze the various software testing approaches.
III	**SDC3IT12**	**PROGRAMMING IN PYTHON**	• CO-1:Explain basic principles of Python programming language • CO-2: Implement object oriented concepts
			• CO-3: Implement database and GUI applications.
			• CO-4: Implementing Server side programming using Python Server side scripting.
			• CO-5: Explaining the features of displaying data from MYSQL in web page
III	**SDC3IT13**	**COMPUTER NETWORKING CONCEPTS**	• CO-1:Recognize the technological trends of ComputerNetworking.
			• CO-2:Discuss the key technological components of the Network.
			• CO-3: Evaluate the challenges in building networks and solutions to those
			• CO-4: Analyze, specify and design the topological and routing strategies for an IP based networking infrastructure
			• CO-5:-Have a working knowledge of datagram and Network Security
III	**SDC3IT14(P)**	**DATA STRUCTURE USING JAVA- LAB**	• CO-1:Ability to identify the appropriate data structure for a given problem.
			• CO-2: Graduate able to design and analyze the time and space complexity of algorithm or program.
			• CO-3: Ability to effectively use compilers includes library functions, debuggers and troubleshooting. • CO-4: Illustrate the

			programs using DS
III	**SDC3IT15 (P)**	**PROGRAMMING IN PYTHON - LAB**	• CO- 1: Write, test, and debug simple Python programs.
			• CO- 2: Implement Python programs with conditionals and loops.
			• CO- 3: Develop Python programs stepwise by defining functions and calling them.
			• CO- 4: Use Python lists, tuples, dictionaries for representing compound data.
			• CO- 5: Read and write data from/to files in Python.
III	**SDC3IT16 (P)**	**COMPUTER NETWORKING- Lab**	• CO-1:Recognizethe technological trends of ComputerNetworking.
			• CO-2: Discuss the key technological components of theNetwork.
			• CO-3: Evaluate The challenges in building networks and solutions to those
			• CO-4: Analyze, specify and design the topological and routing strategies for an IP based networking infrastructure
			• CO5:Have a working knowledge of datagram and Network Security
IV	**A13**	**ENTREPRENEURSHIP DEVELOPMENT**	• CO-1: Able to understand the nature of entrepreneurship and the financial assistance and guidance from the government.
			• CO-2:Confirm an entrepreneurial business idea
			• CO-3: Explore entrepreneurial leadership and management style.
			• CO-4:Confidence in Setting up of Industrial

			units.
IV	**A14**	**PUBLIC HEALTH, SANITATION & SAFETY**	• CO-1: Identify the diseases associated with occupation
			• CO-2: Identify the hazard in industrial area and propose preventive measures
			• CO-3: Manage safety in industries and propose safety measures and PPE
			• CO-4: Demonstrate the hygiene and sanitation procedures
			• CO-5: Demonstrate the microorganism responsible for the disease and their control
IV	**SDC4IT17**	**OPERATING SYSTEMS**	• CO-1 Understand the functions of Operating System
			• CO-2 Classify the different types of OS
			• CO-3 Understand the memory management policies, allocation and scheduling of processes
			• CO-4 Evaluate the requirement for process synchronization and coordination handled by operating system
			• CO-5 Understand the virtual memory & their policies, I/O management, File management and disk scheduling.
IV	**SDC4IT18**	**COMPUTER SECURITY**	• CO- 1:Explain some common software vulnerability issues and classifications mechanisms
			• CO-2: Understand different security protocols.
			• CO-3: Understand security models for computer systems security
			• CO-4: Implement cyber security solutions and use of cyber security, information assurance, and

			cyber/computer forensics software/tools.
			• CO-5: Explain the various controls available for protection against internet attacks, including authentication, integrity check,firewalls, and intruder detection systems.
IV	**SDC4IT19 E1**	**J2EE**	• CO1: - Learn distributed enterprise applications using java.
			• CO2 - Learn web development and server side programming using java
			• CO3: - Learn database managements and spring frameworks.
			• CO4: - The students will be able to develop a small project.
IV	**SDC4IT19 E2**	**.NET PROGRAMMING**	• CO-1: Knowledge of the structure or model of the programming language C # (note)
			• CO-2: Use the programming language C # for various programming technologies
			• CO-3: Develop software in C # (application) • CO-4: Evaluate user requirements for software functionality required to decide whether the programming language C# can meet user requirements(analysis)
			• CO-5:Propose the use of certain technologies by implementing them in the C #programming language to solve the given problem
IV	**SDC4IT20 (P)**	**OPERATING SYSTEMS AND COMPUTER SECURITY –LAB**	• CO1: Familiarization with the UNIX system calls for process management and inter process communication. Experiments on process scheduling and other

			operating system tasks through simulation/implementation .
			• CO2: - Ability to implement inter-process communication, to design and solve synchronization problems , to implement operating system concepts such as scheduling, deadlock management, file management, and memory management.
			• CO3: - Understand the security environment and requirement of cyberspace.
			• CO4: - Identify tools to secure organization's ITinfrastructure and assets.
			• CO5:- Take precautionary measures to ensure protection from attacks, damages and costs.
IV	**SDC4IT21 (P)**	**E1 – J2EE - Lab**	• CO-1: Ability to Create Web Applications using Java Servlet
			• CO-2: Graduate able to Manage Web Session using Servlet and JSP • CO-3: Ability to effectively Handle Errors and Exceptions in Web Applications
			• CO-4: Ability to use NetBeans/ Eclipse IDE for creating J2EE Applications
			• CO-5: Ability to create applications using Hibernate & Spring Framework
IV	**SDC4IT22 (Pr)**	**PROJECT WORK/ INTERNSHIP**	• CO1: Identify the requirements of real world problems.
			• CO2:Study and enhance software/ hardware skills.
			• CO3: Demonstrate and build the project successfully by hardware requirements,coding,

			emulating and testing. • CO4: To report and present the findings of the study conducted in the preferred domain • CO5: Demonstrate Team work
V	**GEC5HR13 (P)**	**BC5B09 HUMAN RESOURCE MANAGEMENT**	To familiarize the students with the different aspects of managing Human Resource in the Organization and To equip the students with appropriate knowledge and skills required for acquisition, development and retention of Human Resources.
V	**SDC5IT17**	**.Net and Database Administrator**	On completion of this course, the student should be able to: Learn the basic of .NET technology Expertise web development.
V	**GEC5LS15 (S04 B.06)**	**Life Skill Education & Presentation Skill**	On completion of this course, the student should be able to: Develop intrapersonal, interpersonal, critical thinking, decision making and communication skills. Establish selfmanagement and help to maintain work life balance. Get an insight to career planning and development
V	**SDC5IT18 (E1/E2/) Elective 1**	**E1. Python Programming and Mobile Web**	On completion of this course, the student should be able to: Expertise Python Programming Learn web based applications for mobile devices
V	**SDC5IT18 (E3/E4) – Elective 2**	**(E3) Mobile Software Development using Android**	On completion of this course, the student should be able to Develop mobile applications with Google Android Platform Learn more about mobile operating system
V	**SDC5IT20 (P)**	**Net and Database Lab**	On completion of this course, the student should be able to: Develop applications with C#.Net and ASP.Net Develop mobile web and applications that runs on multiple platforms.
V	**SDC5IT21 (P) Elective Lab**	**1. Android & Python Programming**	On completion of this course, the student should be able to: Practice and implement the

			theoretical knowledge acquired in the selected elective course.
VI	**SDC6IT22 (Pr)**	**Industrial Training and Project**	On completion of this course, the student should be able to: Utilize the theoretical knowledge and practical exp eriences to solve a real life problem with high standard and accuracy. Get a feel of organizational atmosphere and their p ractices. Induce confidence to manage lage engineering projec ts and make him work ready.

DEPARTMENT OF COMPUTER SCIENCE

Programme Specific Outcomes (PSOs) – B.C.A. Programme

	Programme specific outcomes
PSO1	To prepare the young minds to work in a potentially rich and employable field of computer applications.
PSO2	To be a foundation graduate Programme this will act as a feeder course for higher studies in the area of Computer Science/Applications.
PSO3	To develop skills in software development so as to enable the BCA graduates to take up self-employment in Indian and global software market.
PSO4	To train and equip the students to meet the requirements of the Software industry in the country and outside

Course Outcomes

Semester	Course Code	Course Name	Course outcomes
Common Courses (Code A)			
III	A11	Python Programming	• CO1:Understand various statements,data types and functions in Python
			• CO2: Develop programs in Pythonprogramming language
			• CO3:Understand the basics of Objectoriented programming using Python
	A12	Data Communication andOptical Fibers	• CO1:Understand DataCommunication , Networks and

			Protocols
			• CO2:Understand Optical FiberCommunication
IV	A13	Microprocessors Architecture and Programming	• CO1: To understand internals of Microprocessor.
			• CO2: To learn architecture of 8085Microprocessor
			• CO3: To learn instruction set of 8085Microprocessor
			• CO4: To learn how to program a Microprocessor
	A14	Sensors and Transducers	• CO1: Explain resistance, inductanceand capacitance transducers.
			• CO2: Perceive the concepts oftemperature and pressure transducers.
			• CO3: Perceive the concepts level transducers such as and flow transducers
			• CO4:Explain Electromagnetic

			transducers and radiation sensors
			• CO5: Explain force and torquetransducers and sound transducers
Core courses (Code B)			
I	BCA1B01	Computer Fundamentals &HTML	• CO1:To equip the students with fundamentals of Computer
			• CO2:To learn the basics ofComputer organization
			• CO3:To equip the students to write algorithm and draw flow chart for solving simple problems
			• CO4:To learn the basics of Internetand webpage design
II	BCA2B02	Problem Solving Using C	• CO1:To equip the students with fundamental principles of Problem- Solving aspects.
			• CO2:To learn the concept ofprogramming
			• CO3: To study C language
			• CO4: To equip the students to writeprograms for solving simple computing problems
	BCA2B03	Programming Laboratory I: HTML and Programmingin C	• CO1:To make the students learn webdesigning.
			• CO2: To make the students learn programming environments.
			• CO3:To practice proceduralprogramming concepts.
			• CO4:To make the students equipped to solve mathematical or scientific problems using C
III	BCA3B04	Data Structures Using C	• CO1:To introduce the concept of data structures
			• CO2: To make the students aware ofvarious data structures
			• CO3:To equip the studentsimplement fundamental data structures
IV	BCA4B05	Database Management System and RDBMS	• CO1: To learn the basic principles ofdatabase and database design
			• CO2: To learn the basics of RDBMS
			• CO3:To learn the concepts ofdatabase manipulation SQL

			• CO4: To study PL/SQL language

	BCA4B06	Programming LaboratoryII: Data Structures and RDBMS	• CO1:To make the students equippedto solve mathematical or scientific problems using C
			• CO2:To learn how to implement various data structures.
			• CO3:To provide opportunity tostudents to use data structures to solve real life problems.
V	BCA5B07	Computer Organization andArchitecture	• CO1:To learn logic gates,combinational circuits and sequential circuits
			• CO2:To learn basics of computer organization and architecture
	BCA5B08	Java Programming	• CO1: To review on concept of OOP.
			• CO2:To learn Java Programming Environments.
			• CO3:To practice programming in Java.
			• CO4:To learn GUI Applicationdevelopment in JAVA.
	BCA5B09	Web Programming usingPHP	• CO1:To review on concept of Web Programming.
			• CO2: To learn Client sideprogramming.
			• CO3:To practice programming in PHP
			• CO4: To learn PHP & PostgreSQL.
	BCA5B10	Principles of Software Engineering	• CO1:To learn engineering practicesin Software Development.
			• CO2:To learn various softwaredevelopment methodologies and practices.
			• CO3:To learn and study various Evaluation methods in Software Development.
VI	BCA6B11	Android Programming	• CO1: To have a review on conceptof Android programming.
			• CO2: To learn Android ProgrammingEnvironments.
			• CO3: To practice programming in Android.
			• CO4:To learn GUI Applicationdevelopment in Android platform

			with XML
	BCA6B12	Operating Systems	• CO1: To learn objectives & functionsof Operating Systems.
			• CO2: To understand processes andits life cycle.

			• CO3: To learn and understandvarious Memory and Scheduling Algorithms
			• CO4: To have an overall idea about the latest developments in Operating Systems
	BCA6B13	Computer Networks	• CO1:To learn about transmissions inComputer Networks.
			• CO2:To learn various Protocols usedin Communication.
			• CO3: To have a general idea on Network Administration.
	BCA6B14	Programming LaboratoryIII: Java and PHP Programming	• CO1:To practice Java programming.
			• CO2: To practice client side and Server Side Scripting.
			• CO3: To practice PHP Programming
			• CO4: To practice developingdynamic websites.
			• CO5: To practice how to interact with databases through PHP.
	BCA6B15	Programming LaboratoryIV: Android and Linux shell Programming	• CO1: To practice Androidprogramming.
			• CO2: To practice user interfaceapplications.
			• CO3:To develop mobile application.
			• CO4:To practice shell programming.
	BCA6B16	Software testing & QualityAssurance	• CO1:To get a general introduction and basic skills on software testing and quality assurance techniques and tools
	BCA6B17	Industrial Visit and Project Work	• CO1:To provide practical knowledgeon software development process
Complementary courses (Code C)			
I	BCA1C01	Mathematical Foundationsfor Computer Applications	• CO1: To learn the basic principles oflinear algebra and vectors.
			• CO2: To learn the basic principles ofdifferential and integral Calculus
			• CO3:To learn the mathematicalmodeling using ordinary and partial equations
	BCA1C02	Discrete Mathematics	• CO1: To learn the mathematical logic & Boolean Algebra
II	BCA2C03	Financial & Management Accounting	• CO1: To get a general introductionon accounting and its general application.

			• CO2: To get a general understandingon various tools for financial statement analysis.

			• CO3: To get a general understanding on accounting procedures up to thepreparation of various financial statements.
			• CO4: To get a general understanding of the important tools for managerial decision making.
	BCA2C04	Operations Research	• CO1: To get a general introductioninsolving linear programming problems.
			• CO2: To get a general understandingof network analysis technique.
			• CO3: To get a general understandingof different mathematical models.
III	BCA3C05	Computer Oriented Numerical and Statistical Methods	• CO1: To learn the floating point arithmetic
			• CO2: To learn how to solve linear equations
			• CO3: To learn the numericaldifferentiation and integration
			• CO4: To learn basics of statistics, probability theory
	BCA3C06	Theory of Computation	• CO1: To get a general introductionto Theory of computer science
			• CO2: To get a general understanding on different languages, grammar, automata
IV	BCA4C07	E-Commerce	• CO1: To get a general introduction Electronic Commerce framework.
			• CO2: To a general understand on various electronic payment systems.
			• CO3: To get a general understandingon internal information systems.
			• CO4: To get a general understandingon the new age of Information.
	BCA4C08	Computer Graphics	• CO1: To learn basics of Computer Graphics
Open Course (Code D)			
V	BCS5D01	Introduction to Computers& Office Automation	• CO1: To get a general introductionto office automation packages.
			• CO2: To learn Office Automation.
COMPUTER SCIENCE - COMPLEMENTARY			

I	CSC1C01	Computer Fundamentals	• CO1:To learn the basics of computer hardware units and how they work together
			• CO2:To acquire basic skill with office packages

II	CSC2C02	Fundamentals of System Software,Networks and DBMS	• CO1:To learn the basic concepts ofvarious system software
			• CO2:To learn the basics ofComputer Networks
			• CO3:To learn the basics ofDatabases
III	CSC3C03	Problem Solving Using C	• CO1:To learn the concepts ofprogramming.
			• CO2: To learn the C language
IV	CSC4C04	Data Structure Using C	• CO1:To introduce the concept of data structures
			• CO2: To make the students aware ofvarious data Structures
			• CO3:To equip the students implement fundamentaldata structures
	CSC4C05	Programming Lab: C and Data structure	• CO1:To develop C Programming skills
			• CO2:To make the students equippedto solve mathematical or scientific problems using C
			• CO3:To learn how to implement various data structures.

DEPARTMENT OF MALAYALAM

Programme specific Outcomes (PSOs) –common course for BA/B.Sc/Bcom/BBA/Bvoc Programme

	Programme specific outcomes
PSO1	To give an authentic knowledge about the chronological developments of Malayalam language and literature
PSO2	To familiarize the students with the different genres of literature and our variety artforms .
PSO3	To increase the creative and communicative skills of students.
PSO4	To discuss about the recent trends in Malayalam language and literature and its practical aspects in current situations.
PSO5	To enable them to make multidisciplinary approaches towards other disciplines
PSO6	To understand the various
PSO7	To welcome them in the world of Translation works and its wide cultural and linguistic importance.
PSO8	To enable them for analysing the recent social, cultural, environmental issues and response to it.
PSO9	To know the basic grammatical concepts of Malayalam language
PSO10	To know about the vocabulary of administrative language and its use.

Course Outcomes

Semester	Course Code	Course Name	Course outcomes
I BA/ BSc	MAL1A07(1)	Malayala sahithyam-1	• CO1-To give general awareness about ancient Malayalam poetry and its genres.
			• CO2-To understand the oral traditions and its variety streams.
			• CO3-To develop a clear concept about Malayalam short-story and its developments.
			• CO4- Provide opportunities to them to read different types of fiction. • CO5-Tofamiliarize the students with different perceptive of short-story writers and approach in a critical way.
			• CO6-To analyse the idea -Classicism
			• CO7-To introduce different art forms of Kerala and understand basic
II BA/BSc	MAL2A08(1)	Malayala sahithyam -2	• CO1- To understand the aesthetic concept of modern poetry.
			• CO2- To know about the eminent poets in modern Malayalam poetry.
			• CO3-To introduce the ideas of romanticism, Realism, modernism and post-modernism
			• CO4-To give clear views about Malayalam criticism and it's different ways.
			• CO5-To capable a student to approach a creative work in a critical way
III BA/BSc	MAL3A09	Malayala sahithyam -3	• CO1-To know about general concepts about Malayalam drama and it's importance in literature.
			• CO2-To recognise drama as a literary form and also as a theatre art.
			• CO3-To provide the basic concepts of film making and give information's about it technical sides. To appreciate the beauty of Malayalam films and realize it with its powerful screenplay.
			• CO4-Toprovide general idea about biography and auto-biography literature in Malayalam.
			• CO5-To know about the cultural and geographical importance of travelogues and its literal value.

IV BA/BSc	MAL4A10	Malayala Sahithyam-4.	• CO1-To give general awareness about the socio-cultural aspects of dialects. • CO2-Toanalysethepostmodernnovelconcepts. • CO3-To realize translations as an important tool for cultural and informational changes
			• CO4-To give directions to understand the theoretical ides of translation and enable them for simple translations.
			• CO5-To analyse the historical and cultural components which includes in Malayalam prose through the study of the given texts.
I sem Bcom / BBA	MAL1A07(2)	Malayala Sahithya padanam-1	• CO1-To analyse the application level and it's distinctiveness of language in scientific articles. • CO2-To analyse the narrative styles and perspectives of Eminent Novelists and storywriters
			• CO3-To realise the fictional beauty of Malayalam short stories
			• CO4-To understand the creative beauty of Malayalam novels.
			• CO5-To make use of travelogues for analyse the difference between many places.
II sem Bcom / BBA	MAL2A08(2)	Malayala sahithya Padanam-2	• CO1-To provide the knowledge about the evolution of Malayalam poetry in different time.
			• CO2-To know about the general concepts about

			Malayalam short story
			• CO3-To recognize drama as a literary work and also a performing art.
			• CO4-To give opportunities to students for creative performances.
			• CO5-To read biography and autobiography of famous personalities and get inspired by it's valuable messages
I sem BCA / Bvoc (Other pattern)	MAL2A07(3)	Malayalam - Bhashayum sahithyavum-1	• CO1-To give general awareness about Malayalam short story and its specialties.
			• CO2-To familiarize different styles of prose and the importance of the views of the Writers.
			• CO3-To enjoy and analyse the modern Malayalam poems and prepare them for creative writing and thinking
			• CO4-To realize travelogues as an important ways to understand different cultures and languages.
			• CO5-To provide opportunity to familiarize with travelogues and read it is in an interesting way.
			• CO6-To find values which direct our life in a good way.
II sem BCA / Bvoc (other pattern)	MAL202(2)	Malayalam Bhashayum Sahithyavum-2	• CO1-To give general awareness about Malayalam short story and its specialties.
			• CO2-To give directions to science students how to analyse a autobiography for a better reading and good thinking.
			• CO3-To provide opportunity to appreciate Malayalam novels which represents different narrative styles and themes.
			• CO4-To understand the factors which accelerate the major changes happened in the history of Malayalam drama.
			• CO5-To analyse the art of Malayalam drama and its importance in emerging Kerala culture

DEPARTMENT OF HINDI

Programme specific Outcomes BA/BSc Programme Common Course in Hindi

HIN1A07		To acquaint the students with different forms, thoughts and styles used in Hindi Drama through the ages; To make them able to critically evaluate the dramas prescribed and use this knowledge while dealing with other dramaticworks in Hindi; to make them get a glimpse of the present scenario in respect of Hindi Theatre; to help them develop their creative thinking and writing.

HIN2A08	To make the student well versed in Hindi so that he can speak Hindi fluently and use Hindi as a medium of communication in the fields of Commerce, administration and thus to develop communicative and technical skills in Applied Hindi.
HIN3A09	To acquaint students with the thoughts, ideas and ideologies of ancient andmodern Hindi Poets. To encourage them to read more Hindi poetry and to help the students to develop their creative capability.
HIN4A10	To acquaint the students with different forms, thoughts and styles used in Hindi Novels; To make them able to critically evaluate the novels prescribed and use this knowledge while dealing with other novels and short stories in Hindi , to help them develop their creative thinking and writing.

Course Outcomes BA/BSc Programme Common Course in Hindi

Semester	Course code	Course name	Course outcomes
I semester	HIN1A07	Prose & Drama	• C01- Approach literary texts in termsof genre, gender and the canon.
			• C02- Understand and use academic conventions: referencing andbibliography.
			• C03- Exposed to the origin and development of Hindi drama and its various themes and forms of different ages and stages.
			• C04- Helps students explore how writers use the resources language as a creativity to explore the entire range of human experience through dramas as a literary form.
II	HIN2A08	Grammar & Translation	• C01- Understand the differences between spoken and written Hindi.

			• C02- Understand the factors that influence use of grammar and vocabulary in speech and writing.
			• C03- Understand the different ways in which grammar has been described.
			• C04- Define the link between translation theory and translation practice.
			• C05- Define the effects of translationtheories on translation practice.
			• C06- Define the contribution of translation practice to translation theory.
III	HIN3A09	Poetry in Hindi	• C01- Understand the common techniques underlying free verse and traditional forms of poetry.
			• C02- Identify personal experiences that can be used when writingpoems.
			• C03- Understand the basic terminology and practical elements of poetry.
IV	HIN4A10	Novel & Short Stories	• C01- Enables the students to analyze literature and fiction using appropriate theoretical, historical, and cultural apparatus.
			• C02- Students get to know various cultures and construction of gender, nation and race throughout the history.
			• C03- The prescribed fiction helps the students to learn human values and the behavioral patterns from great works of art, and develops the ability to understand human race.

Programme specific Outcomes B Com/BBA Common Course in Hindi

HINA07(2)	To inculcate an appreciation of literature in students using the best specimens provided as a reading list or anthology and by practicing literary analysis and literary criticism using the best specimens. Thus, understanding Literary works as cultural and communicative events-different periods, genres and movements.
HINA08(2)	A student who successfully completes the course should be able to prepare all kinds of letters independently as required in their personal, professional and social life. Also to make the students familiarize with the correspondence and to enhance the capability of comprehending data and relevance documents.

Course Outcomes B Com/BBA Common Course in Hindi

Semester	Course Code	Course Name	Course Outcomes
I Semester	HINA07(2)	Prose Forms In HindiLiterature	• C01- Approach literary texts in terms ofgenre, gender and the canon.
			• C02- Understand and use academic conventions: referencing and bibliography.
			• C03- The learner will be aware of socio- political and economic conditions of the society from different periods.
II Semester	HIN08(2)	Poetry , Correspondance And Translations	• C01- Understand the common techniques underlying free verse andtraditional forms of poetry.
			• C02- Identify personal experiences thatcan be used when writing poem.
			• C03- Understand the basic terminologyand practical elements of poetry.
			• C04- Define the link between translationtheory and translation practice.
			• C05- Define the effects of translationtheories on translation practice.
			• C06- Define the contribution of translation practice to translation theory.

			• C07- Understand the importance ofcorrespondence.

Programme specific Outcomes Other Pattern Common Course in Hindi

HINA07(3)	Familiarize the students with some of the eminent writers in rose literature and thereby inculcate Socio-cultural values. And also to developcommunicative and technical skills in Applied Hindi.
HINA08(3)	To acquaint the students with different forms, thoughts and styles used in Hindi poetry and drama through the ages; To make them able to criticallyevaluate the poetic and dramatic works prescribed and use this knowledge while dealing with other works in Hindi; to help them develop their creative thinking and writing

Course Outcomes Other Pattern Common Course in Hindi

Semester	Course Code	Course Name	Course Outcomes
I Semester	HINA07(3)	Prose And Oneact Plays	• C01- Approach literary texts in terms of genre, gender and the canon. Understand and use academic conventions: referencing andbibliography. • C02- The learner will be aware of socio-political and economic conditions of the society from different periods. Be familiar with the theoretical foundations of the genre. • C03- Be able to compare and contrast the genre with other dramatic forms.

II Semester	HIN08(3)	Poetry And Short Stories	• C01- Understand the common techniques underlying free verse and traditional forms of poetry • C02- Identify personal experiences that can be used when writing poems. • C03- Understandthe basicterminology and practical elements of poetry. • C04- Students get to know various cultures and construction of gender, nation and race throughout the history. The prescribed fiction helps the students to learn human values and the behavioral patterns from great works of art, and develops the ability to understand human race.

M.A. HISTORY PROGRAMME

Programme Outcome	Course Outcome
• Enables the student to analyse the process of historical transformation. • Enables the student to locate the cardinal forces of change in the historical development. • Enables the student to evaluate the changing perceptions of Indian society and culture. • Enables the student to design a research proposal in his area of interest. • Enables the student to demonstrate the socio-economic and political dimensions of contemporary society. • Enables the student to appreciate and formulate the values of Indian Nationalism, democracy and secularism.	**HIS 1C01 - Method of Historical Research** • Ability to understand major trends in Methods of historical research • Ability to evaluate the initial phases of research • Ability to analyse the various methods of documentation and criticism **HIS 1C02: Pre-Modern Kerala: Problems and Perspectives** • Understands the need to examine primary evidence • Realises the importance of critical methodology in writing history • Students make use of the knowledge in other disciplines to understand the history • Learns the importance of re-reading primary sources and evidence • Uses analytical methodology in the study of regional history **HIS 1CO3 - Problems, Perspectives and Debates in Early Indian History** • It enables the students to explain and critique the major problems and debates in early Indian history. • It helps them to evaluate the perspectives in early Indian history and helps to formulate research problems in their area of interest. • The course enables them to correlate and develop skill in the comparative analysis of situations in their area of interest. • It makes them identify fresh insights in the area of early Indian history. **HIS 1C04 : Early Bronze and Iron Age Civilisations** • It will develop a strong foundation and critical understanding of the shifting nature of human civilization. • It will always seek to make the debate on the ancient state. • Students will familiarise with all arch-type

	tools and their growing pattern. • It will provide a strong foundation for thinking mode in human evolution. **HIS 2C01- History and Theory** • Ability to locate the post-enlightenment stream of historical thought • Ability to understand classical social theories • Ability to evaluate the methodological innovations of Annales school • Ability to demonstrate Methodological debates and contemporary trends. **HIS 2C02 - History of Modern Kerala: Problems and Perspectives** • Understand the modernization of Kerala society and its process • Acquire the ability to examine the transformation of society in a critical manner • Lear the underplay of different forces in the making of changes in the society • Identify newer problems for further study and investigation in modern history **HIS 2C03 - State and Society in Medieval India** • Ability to locate Historiographical understanding of medieval India • Ability to understand aspects of state and society of medieval India • Ability analyze the transformation of religion and social stratification in medieval India • Ability to demonstrate the growth of science, technology and culture **HIS 2C04 - SELECTED PROBLEMS OF MEDIEVAL AND MODERN WORLD HISTORY** • Enable the students to analyse the medieval and modern periods of world history in a comprehensive manner. • Enable the students to identify major historiographical positions on the transition from the medieval to the modern period. • Enable the students to evaluate the ideologies of the renaissance, enlightenment and French

	Revolution that shaped the life of people. **HIS3C01 PERSPECTIVES ON COLONIALISM IN INDIA** • It enables the student to formulate the various issues on the colonial period about the colonial administration and exploitation of Indian society. • It attempts to identify the colonial development in India under the British colonial rule. • It enables the student formulate consolidation of English East India Company. **HIS 3C 02 DISCOURSES ON INDIAN NATIONALISM** • The students will do their further works on the insights of discourse analysis. • The course will be strengthened their analytical capacity in Indian history with the expertise manner of nationalism divergently. • It will tend to democratic and constitutional values in this practical living world. **HIS 3E 04 SELECTED THEMES IN ECONOMIC HISTORY OF MEDIEVAL INDIA** • Ability to understand the economic activities of Medieval India • Ability to differentiate various forms of taxes and other dues on agricultural and non-agricultural production • Ability to analyse the cardinal changes in the economy of medieval India • Ability to locate the centres of trade, urbanization and trade routes of medieval India **HIS 3E 06 RECENT PERSPECTIVES ON SOCIAL HISTORY OF MEDIEVAL KERALA** • The course enables the students to explain and critique the recent developments in the social history of medieval Kerala. • It helps them to evaluate and critique the trends in social history and helps to formulate research problems in their area of

	interest. • The course enables them to correlate and develop skill in the comparative analysis of situations in their area of interest. • It makes them identify fresh insights in the area of the social history of medieval Kerala. **HIS 4C 01: PROBLEMS AND DEBATES IN CONTEMPORARY INDIA** • To enable the students to contribute substantially to the development of a country through an understanding of the historical events. • They will be able to communicate past events sequentially and coherently. • Enable the students to develop problem-solving abilities at different levels locally, regionally and nationally. • It develops international understanding. • The learning outcomes are observable and measurable through their social behaviour and involvement in the process of national development. **HIS 4C 02: Selected Themes in Pre-modern South India** • The course enables the students to evaluate the socio-cultural life of the people in pre-modern South India. • It helps them to identify the trends in South Indian history and helps to derive research problems in their area of interest. • The course enables them to correlate and develop skill in the comparative analysis of situations in various parts of the country. • It enables them to formulate persuasive arguments in the area of pre-modern South Indian history. **HIS 4E 01-ARCHAEOLOGY: THEORY AND PRACTICE** • This course equips the students to get a broad knowledge of the multi-disciplinary field of Archaeology, and a more detailed understanding of several of these disciplines and sub disciplines. ● It enabled the students to understand the archaeological methods and theories used to evaluate artefacts and other data.

	Semester	Course code	Course/topic name related
Employability	Semester	Course Code	Editing /Topic Name Related
Entrepreneurship	I	HIS1CO1	Editing
Skill Development	I	HIS1CO1	Research in Practice I & II
	IV	HIS4EO1	Writing Research Paper &Projects; Citations Archaeology in the Field; Post-Field Research

	● It provides knowledge and skills of archaeology that helps the students to become a field archaeologist or researcher ● It gives a chance to understand and appreciate the legacy of ancient cultures of India in general and south India in particular **HIS 4E 06: Indian Literature in Historical Perspectives** • Students will be able to view Indian literary tradition from a historical perspective and critically respond to texts. • They will identify that the relationship between history and literature are at multiple levels and how do they supplement each other. • Introduce the students to the trajectory of Indian literature with landmark writings and the historical context in which they have been written.

Skill Development	I IV	HIS1CO1 HIS4EO1	Research in Practice I & II Writing Research Paper &Projects; Citations Archaeology in the Field; Post-Field Research
Professional Ethics	I	HIS1CO1	Plagiarism & Ghost Writing; Plagiarism check
Gender	II II II III III III	HIS2CO1 HIS2CO2 HIS2CO3 HIS3CO1 HIS3EO4 HIS3EO6 HIS4CO1 HIS4CO2	Gender History Women &Gender History in Kerala Positions of Women in Medieval India Women under Colonialism; Colonial Economy and women's work Gender & Labour State in Medieval India Gender Relations in Medieval Kerala; Matriliny & Patriliny; Heroines in *Manipravalakavyas*: Brahmanical Patriarchy & Gender Positions in Kerala Gender &Rise of Women's Movement in Contemporary India Women in Pre-Modern South India
Human Values	III	HIS3CO2	Gandhian Discourse; Ambedkarite Intervention
Environment	II IV	HIS2CO2 HIS4CO1	Human Ecology & Settlement Environmental Movements in India
Sustainability			

DEPARTMENT OF SOCIOLOGY

Programme Specific Outcomes (PSOs) –Sociology Programme

- **At the end of the two year M.A. course in which students not only take classes in all theimportant sub-disciplines of the subject but also attend a rigorous tutorial programme, they will not only have a comprehensive knowledge of important concepts and issues in sociology and society at large but will have also developed skills such as critical thinking, and the ability to formulate cogent arguments which will give them an edge in any profession that they wish to pursue.**

Course outcomes

Semester	Course code	Course name	Course Outcomes

I	SOC1 C01	Foundations Of Sociological Theory	• CO1- Traces out the history ofsociology • C02- Introduces the ideas of thepioneering sociological thinkers • C03- Recognises the relevance of theclassical theory in contemporary societies
	SOC1 C02	Research Methodology Of Sociology	• C01- To familiarize the students with quantitative and qualitative research • C02- To understand the steps and stages of research • C03- To inculcate research aptitude inthe students
	SOC1C03	Sociology Of Indian Society	• C01- To introduce the different approaches to the study of Indian Society • C02- To discuss the different issues ofIndian society • C03- To analyze the transformations in Indian society
	SOC1C04	Rural And Tribal Socities In India	• C01- To acquaint students with basics of rural and tribal societies in our country • C02- To analyze rural and tribal problems • C03- To provide knowledge of ruraland tribal social institutions

	SOC 1A01	Audit course 1	• C01- Ability Enhancement programme
II	SOC2C05	Schools Of Sociological Theory -I	• C01- To familiarize with various schools of sociological theory • C02- To enable a critical examination of the major schools of thought • C03- To help recognize the utility and relevance of the theoreticalpremises
	SOC2C06	Research Methodology-II	• C01- To familiarize with quantitativeand qualitative research methods • C02- To familiarize scaling techniques • C03- To familiarize the variouscomponents and format of report
	SOC2C07	Urban Sociology	• C01- To familiarize with the basicideas of Urban Sociology • C02- To discuss issues of urbandevelopment • C03- To initiate a critical discussionon Urban society
	SOC2C08	Gender Studies	• C01- To introduce the basic conceptsof Gender Studies • C02- To familiarize the theoreticalperspectives on Gender • C03- To discuss the Gender dynamicsin Indian society • C04- To discuss Gender relations inthe context of Kerala society
	SOC2A02	Audit Course 2	• C01- Skill Development Programme
III	SOC3C09	Schools Of Sociological Theory-II	• C01- To familiarize with variousschools of sociological theory • C02- To initiate critical discussion onthe major schools of thought • C03- To create an awareness on therelevance of the theoretical premises.

	SOC3C 10	Sociology Of Development: Themes And Perspectives	• C01- To familiarize the student with conceptual discussions on development • C02- To initiate discussions on the theoretical views of development • C03- To evaluate the Indian experience of development
	SOC3E03	Sociology Of Health	• C01- To provide the basic understanding of health in Social context • C02- To create awareness on the sociological perspectives of Health and Medicine • C03- To familiarize with the activities of World Health Organization • C04- To evaluate health planning policies and programmes in India.
	SOC3E05	Project Planning And Preparation	• C01- To familiarize the students with the basic steps involved in project planning and preparation • C02- To understand the relevance of project planning in contemporary research • C03- To equip the student with the skills necessary for project planning and preparation of a proposal
IV	SOC4 C11	Current Debates In Social Theory	• C01- To familiarise the students with the contemporary debates in social theory • C02- To initiate discussions on the recent theoretical concepts andideas • C03- To help the students to understand the relevance of theoretical discussions in contemporary society

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	SOC4C12	Economic Sociology	• C01- To introduce the basic concepts of Economic Sociology • C02- To familiarize the theoretical perspectives of Economic Sociology • C03- To analyse the impact of Globalization on economy • C04- To understand the relationship between economy and society
	SOC4 E 06	Guidance And Counseling	• C01- To provide a basic understanding about guidance and counseling • C02- To create awareness of the different techniques and the process of counseling • C03- To familiarise with the areas of counseling • C04- To recognize the significance of counseling in contemporarysociety
	SOC4E07	Kerala Society: Structure And Change	• C01- To familiarise the student with the social structure of Kerala • C02- To analyse the major transformations that have taken place in Kerala • C03- To study about the major movements that have influenced Kerala society • C04- To understand the contemporary Kerala society and its unique features
	SOC4P01	DISSERTATION	

DEPARTMENT OF ENGLISH

Programme Specific Outcomes (PSOs) –

M.A. English Language and Literature Programme (2019 Onwards)

	Programme specific outcomes
PSO1	To help learners to improve their proficiency in English by developing their listening, speaking, reading and writing skills for academic and non-academic purposes.
PSO2	To facilitate basic knowledge in English critical tradition from the beginnings to the present and to develop research aptitude by learning literary and cultural theories
PSO3	To get enlightened by reading texts from literatures of English like British Literature, Indian Literature, American Literature and Malayalam Literature in Translation

PSO4	To gain insights into the basic concepts and theoretical frameworks of World Drama, Translation Studies, History of English Language, Linguistics, Postcolonial Writings and Literature and Ecology and to recognize the significance of the cultural, religious, social and historical contexts in which texts are produced and comment on the linguistic diversity they contain.
PSO5	To help learners to improve their proficiency in applying various skills in their personal and professional lives thereby enhancing their employability prospects.

Core, Elective And Audit Courses: Course Outcomes

Semester	Course Code	Course Name	Course outcomes
I	ENG1CO1	Core Course-I: British Literature from Chaucer to Eighteenth Century	• Learners become familiar with the various movements and the great classics in British Literature from the age of Chaucer to the 18th century and get enlightened by the experience of reading and analyzing them.
	ENG1CO2	Core Course-II: British Literature: Nineteenth Century	• Learners get acquainted with the great classics and various movements of the 19th century British Literature with a critical bent of mind.
	ENG1CO3	Core Course-III: History of English Language	• Learners are able to study the origin, evolution, and growth of English language over the ages by understanding its phonetic, syntactic and semantic structures.
	ENG1CO4	Core Course-IV: Indian Literature in English	• Learners become familiarized with the English used by the various Indian writers who write in English, get exposed to the constraints and challenges encountered in articulating Indian sensibility in English and acquainted with a wide range of Indian texts from poetry, fiction, drama and prose writings in English.
	ENG1AO1	Audit Course-I: A01 Writing Skills	• Learners improve their writing skills which help them in developing the linguistic, cognitive and logical skills required in writing different types of essays, anecdotes, academic papers and reports.
II	ENG2CO5	Core Course-V: Twentieth Century British Literature up to 1940	• Learners develop a sound understanding of genres, authors, and ideas by a close reading of the representative texts of the period.

	ENG2CO6	Core Course-VI: Literary Criticism and Theory – Part1 (Up to New Criticism)	• Learners get introduced to the key texts, figures and ideas in the development of literary theory and criticism from the classical to New Criticism which in turn enhance the research spirit in them.
	ENG2CO7	Core Course-VII: American Literature	• Learners are initiated to a critical knowledge of the major literary innovations and cultural issues of America by understanding the character and ethos of the American literature through representative texts.
	ENG2CO8	Core Course-VIII: Postcolonial Writings	• Learners get familiar with the issues and themes in Postcolonial writings as well as the literary concepts of Postcolonialism keeping in mind some of the prominent questions that have come to define postcoloniality such as the question of history, modernity, identity and language.
	ENG2A02	Audit Course-II: Translation Theory and Practice	• Learners get familiarized with the core of translation theory and some of the current theoretical positions which help them to develop practical skills in the translation of literary and non-literary texts.
III	ENG3CO9	Core Course-IX: Twentieth Century British Literature: Post 1940	• Learners get exposed to an experience of Post 1940 British Literature and to critically analyse the latest developments through select texts from different genres.
	ENG3C10	Core Course-X: Literary Criticism and Theory – Part 2	• Learners get insights into Structuralism, Post-Structuralism/ Deconstruction, Psychoanalytic Criticism, Feminism, Cultural

			Materialism/New Historicism, Postcolonialism, Ecocriticism and how to critique theory.
	ENG3EO4	Elective Course– I: Introduction to Linguistics	• Learners get to know about the various schools of linguistics and levels of linguistic analysis- Phonology, Morphology, Syntax and Semantics which help them to understand the relationship between linguistics and related disciplines.
	ENG3EO7	Elective Course– II: World Drama	• Learners are given a bird's eye-view of the dramatic changes that took place in the World Drama and helped to read the plays as being representative products of their milieu by juxtaposing these against their political and socio-cultural contexts.
IV	ENG4C11	Core Course-XI: English Literature in the 21st Century	• Learners get exposed to experience 21st British Literature and to critically analyse the latest advances through select texts from various genres.
	ENG4C12	Core Course XII: Dissertation/ Project	• Learners get a space to express their creative talent based on the knowledge and skills they have acquired through their dissertations, which in turn equip them for advanced literary research.
	ENG4C13	Core Course XIII: Comprehensive Viva Voce	• It enables the learners to demonstrate their ability to participate in academic discussions anddefend their Dissertation/ Project and other queries related to their entire PG Programme verbally which give confidence to attend placement interviews later.
	ENG4E12	Elective Course– III: Literature and Ecology	• Learners get exposed to the scopes of green poetics and green cultural studies through a variety of ecologically conscious literary works and equipped them with an understanding of current global environmental issues.
	ENG4E18	Elective Course– IV: Malayalam Literature in English Translation	• Learners get familiarized with the movements and trends in Malayalam Literature since the 1970s from the select texts of Malayalam Literature in Translation irrespective of poetry, fiction, drama and prose reflecting Kerala culture and aesthetics.

Name of programme : M.Sc Mathematics

POs	Cos
PO1: A solid understanding of graduate level algebra, analysis and topology. PO2: Using their mathematical knowledge to analyze certain problems in day to day life. PO3 : Identifying unsolved yet relevant problems in a specific field. PO4: Undertaking original research on a particular topic PO5: Communicate mathematics accurately and effectively in both written and oral form. PO6: Conducting scholarly or professional activities in an ethical manner.	**MTH1C01: ALGEBRA – I** CO1:Learn factor group computation. CO2: Understand the notion of group action on a set. CO3: Learn Sylow theorems and its applications. CO4:Understand the notion of free groups. CO5:Understand the concept rings of polynomials CO6: Learn group presentation **MTH1C02: LINEAR ALGEBRA** CO1: Learn basic properties of vector spaces. CO2: Understand the relation between linear transformations and matrices. CO3:Understand the concept of diagonalizable and triangulable operators and various fundamental results of these operators. CO4:Understand Primary decomposition Theorem. CO5: Learn basic properties inner product spaces. **MTH1C03: REAL ANALYSIS I** CO1: Learn the topology of the real line CO2: Understand the notions of Continuity, Differentiation and Integration of real functions. CO3: Learn Uniform convergence of sequence of functions, equicontinuity of family of functions, and Weierstrass theorems. **MTH1C04: DISCRETE MATHEMATICS** CO1: Understand the fundamentals of Graph Theory. CO2: Learn the structure of graphs and familiarize the basic concepts to analyze different problems in different branches. CO3: Acquire a basic knowledge of formal languages, grammar and automata. CO4: Learn equivalence of deterministic and nondeterministic finite accepters. CO5: Learn the concepts of partial order

	relation and total order relation. **MTH1C05: NUMBER THEORY** CO1: Be able to effectively express the concepts and results of number theory. CO2: Learn basic theory of arithmetical functions and Dirichlet multiplication, averages of some arithmetical functions . CO3: Understand distribution of prime numbers and prime number theorem. CO4: Learn the concept of quadratic residues and Quadratic reciprocity laws. CO5: Get a basic knowledge in Cryptography **MTH2C06: ALGEBRA II** CO1:Learn different types of extensions of fields. CO2: Learn automorphisms of fields. CO3: Get a basic knowledge in Galois Theory. CO4: Learn how to apply Galois Theory in various contexts. **MTH2C07: REAL ANALYSIS II** CO1: Learn why and for what the theory of measure was introduced CO2: Learn the concept of measures and measurable functions CO3: Learn Lebesgue integration and its various properties CO4: Learn how to generalize the concept of measure theory. CO5: Learn that a measure may take negative values. **MTH2C08: TOPOLOGY** CO1: Be proficient in the abstract notion of a topological space, where continuous function are defined in terms of open set not in the traditional $\varepsilon - \delta$ definition used in analysis. CO2: Realize Intermediate value theorem is a statement about connectedness, Bolzano weierstrass theorem is a theorem about compactness and so on. CO3: Learn the concept of quotient topology. CO4: Learn five properties such as T_0, T_1, T_2, T_3 and T_4 of a topological space X which express how rich the open sets is.

	More precisely, each of them tells us how tightly a closed subset can be wrapped in an open set. **MTH2C09: ODE AND CALCULUS OF VARIATIONS** CO1: Learn the existence of uniqueness of solutions for a system of first order ODEs. CO2: Learn many solution techniques such as separation of variables, variation of parameter power series method, Frobeniious method etc. CO3: Learn method of solving system of first order differential calculus equations. CO4: Get an idea of how to analyze the behavior of solutions such as stability, asymptotic stability etc. CO5: Get a basic knowledge of Calculus of variation. **MTH2C10: OPERATIONS RESEARCH** CO1: Learn graphical method and the simplex algorithm for solving a linear programming problem. CO2: Learn more optimization techniques for solving the linear programming modelstransportation problem and integer programming problem. CO3: Learn optimization techniques for solving some network related problems. CO4: Learn sensitivity analysis and parametric programming, which describes how various changes in the problem affect its solution. **MTH2A02: TECHNICAL WRITING WITH LATEX (PCC)** CO1: Create and typeset a LaTeX document. CO2: Typeset a mathematical document using LaTex. CO3: Learn about pictures and graphics in LaTex. CO4: Create beamer presentations. **MTH3C11: MULTIVARIABLE CALCULUS AND GEOMETRY** CO1: Be proficient in differentiation of functions of several variables. CO2: Understand curves in plane and in

	space. CO3: Get a deep knowledge of Curvature, torsion, Serret-Frenet formulae CO4: Learn Fundamental theorem of curves in plane and space. CO5: Learn the concept of Surfaces in three dimension, smooth surfaces, surfaces of revolution CO6: Learn explicitly tangent and normal to the surfaces. CO7: Get a thorough understanding of oriented surfaces, first and second fundamental forms surfaces, gaussian curvature and geodesic curvature and so on. **MTH3C12: COMPLEX ANALYSIS** CO1: Learn the concept of (complex) differentiation and integration of functions defined on the complex plane and their properties. CO2: Be thorough in power series representation of analytic functions, different versions of Cauchy's Theorem. CO3: Get an idea of singularities of analytic functions and their classifications. CO4: Learn different versions of maximum modulus theorem. **MTH3C13: FUNCTIONAL ANALYSIS** CO1: Learn the concept of normed linear spaces and Hilbert spaces. CO2: Learn various properties operators defined on both normed and Hilbert spaces. CO3: Understand the concept dual space. CO4: Learn the completeness of the space bounded linear operators. **MTH3C14: PDE and Integral Equations** CO1: Learn a technique to solve first order PDE and analyse the solution to get information about the parameters involved in the model. CO2: Learn explicit representations of solutions of three important classes of PDE Heat equations Laplace equation and wave equation for initial value problems. CO3: Get an idea about Integral equations. CO4: Learn the relation between Integral and differential Equations. **MTH3E01: CODING THEORY**

	CO1: The basics of coding theory. CO2: Learn to detect and correct the error patterns. CO3: Learn to implement the fundamental concepts in linear algebra to coding theory. CO4: Understand about different types of coding and decoding methods and develop the problem solving ability. CO5: Attain the skills to represent cyclic codes in terms of polynomials. **MTH4C15 ADVANCED FUNCTIONAL ANALYSIS** CO1: Understand the notions of Fredholm theory of compact Operators and their properties. CO2: Apply the theory to understand and solve some problems of integral equations at an appropriate level of difficulty. CO3: Describe the construction of the spectral integral. CO4: Recognize the fundamentals of Banach spaces and Banach Algebras. **MTH4E06: ALGEBRAIC NUMBER THEORY** CO1: Understand that abstract algebra may be used to solve certain problems in Number Theory. CO2: Learn about arithmetic of algebraic number fields. CO3: Understand that the familiar unique factorization property may fail in the case of ring of integers of some quadratic fields while a unique factorization theory holds for ideals of ring of integers of a number field. CO4: Learn finiteness of class numbers. CO5: Understand that the notions of algebraic numbers may be applied to prove Kummer's special case of Fermat's Last Theorem. **MTH4E09: DIFFERENTIAL GEOMETRY** CO1: Understand how calculus of several variables can be used to develop the geometry of n-dimensional oriented n-surface in $\mathbb{R}^{n+1}$. CO2: Understand locally n- surfaces and parametrized n- surfaces are the same. CO3: Develop a knowledge of the Gauss

	and Weingarten maps and apply them to apply them to describe various properties of surfaces. **MTH4E11: GRAPH THEORY** CO1: Learn different types of graphs. CO2: Learn the concept matching in graphs and related results. CO3: Understand what is meant by coloring. CO4: Learn Planar Graphs.

Department of Botany

Programme specific outcomes:-M.Sc. Botany 2020 Admission:

Programme specific outcomes
• After completing the PG course in Botany, the students will be able to acquire competency in the area of plant biology. • Will be competent in differentiating the diverse groups of plants and microbes • Will be well versatile in understanding the importance of nature and natural ecosystems along with sustainable • utilization of natural resources for the betterment of humankind. • Will have a sound understanding in the cultivation process of crop plants, its diseases and managing the • diseases. • Will be trained in acquiring the problem solving skills in environmental monitoring and pollution control • measures • Understand the importance of biodiversity conservation • Gain knowledge in understanding the importance of research, its methodology, use of library & digital • resources • The use of sophisticated equipments and to demonstrate analytical ability to tackle the scientific research • problems and also to maintain a high level of botanical research. • Acquire the ability to understand life processes at cellular as well as molecular level • Acquire core competency in distinguishing the internal structure of various groups of plants and knows the • concept, process, physiology of plant development.

Course Outcomes

Semester	Course Code	Course Name	Courseoutcomes
I	BOT1C01	Phycology, Bryology, Pteridology and Gymnosperms	1. Provideknowledge on the occurrence and evolution of plant groups like Algae, Bryophytes, Pteridophytes and Gymnosperms. 2. Develop understanding on the classification, nomenclature, diversity and distribution in these plant groupswith uptodate research knowledge. 3. Develop understanding on the range of variation in their structural and life cycle patterns, cellular organization and ecological / economic importance as separate plant groups. 4. Develop hands-on approaches to study algae, Bryophyte, Pteridophyte and Gymnosperm populations and their growth forms in the surrounding environment ● Understand and distinguish the diverse group of algae ● Infer the economic value of different types of algae ● Outline the ecological significance of algae ● Build the skills for collection, identification and artificial culture of algae. ● Interpret different groups of Bryophytes and Pteridophytes ● Analyze the different theories regarding the origin of both Bryophytes and Pteridophytes and develop ideas regarding their evolution. ● Compare the structural evolution of gametophytes and sporophytes in both Bryophytes and Pteridophytes. ● Clarify organization of different types of steles, sori and sporangial characters in an evolutionary perspective ● Validate the ecological and economical roles played by both Bryophytes and Pteridophytes. ● Understand the classification of Gymnopserms ● Make use of the economic value of

			Gymnosperms ● Acquire the skills for field identification of Gymnosperms
	BOT1C02	Mycology & Lichenology, Microbiology and Plant Pathology	1. Develop understanding of the major groups of organisms like fungi, lichens and microorganisms, theiroccurrence, distribution and systematic classification. 2. Acquaint with the basic understanding of plant diseases, causative organisms, mode of action and measures for their control 3. Acquire practical knowledge onfungi, lichens, micro-organisms, plant pathogens and mode of their growth inspecific habitats. 4. Develop understanding on the ecological and economic significance of the above groups of organisms. a. Understand the diversity of fungi. b. Classify fungi based on different classification system and recognize recent trends in classification of fungi c. Distinguish fungal group with their characteristic features d. Understands the interaction of fungi with other living organisms. e. Understands economic importance of different fungal groups f. Identify the different types of fungi with reason. g. Develop the understanding of the concept of microbial nutrition h. Classify viruses based on their characteristics and structure i. Examine the general characteristics of bacteria and their reproduction j. Enhance their awareness and appreciation of human friendly viruses, bacteria and their economic value k. Understand the basic principles of plant pathology and plant protection l. Identify the different plant diseases and their quarantine measure. m. Familiarize with the basic skills and techniques related to mycology and plant pathology

	BOT1C03	Angiospermanatomy,Angiospermembryology,Palynology &Lab Techniques	1. Develop Understanding Of The Structural Composition And Functional Organization In Major Land Plants 2. Acquire Knowledge On The Reproduction And Developmental Processes Associate With Major Land Plants 3. Understand The Significance Of Pollen Studies In Developmental Process And The Recent Developments In Palynology 4. Practical Knowledge On Cell And Tissue Organization, Developmental Stages And Process Associated With The Reproduction In Major Land Plants. A. Retrieve Different Types Of Tissues, Non-Living Inclusions In Plant Cells. B. Interpret Structure, Function And Roles Of Vascular Cambium And Cork Cambium. C. Categorize Different Types Of Anomalous Secondary Growth And Their Anatomical Peculiarities And Adaptational Significance. D. Illustrate Significance And Properties Of Wood &Amp;Fibres Used Commercially. E. Analyze Leaf Initiation, Types Of Stomata And Trichomes And Appraise Anatomical Peculiarities In C3, C4 And Cam Plants. F. Compare Nodal Anatomy , Floral Anatomy And Their Evolutionary Significance G. Illustrate The Organogenesis In Plants H. Acquire The Basic Concepts Of Developmental Biology I. Summarize The Embryogenesis In Plants J. Familiarizes With Biological Instrumentation And Plant Micro Technique
	BOT1L01	Practicals of Phycology, Bryology, Pteridology, Gymnosperms, Mycology And Lichenology	1. provide practical knowledge on the collection and identification of members of Algae, Fungi and Lichens 2. Provide practical knowledge on the collection of plant groups like Bryophytes, Pteridophytes, Gymnosperms and assessment of their morphological and anatomical features through laboratory exercises.
	BOT1L02	Practicals Of Microbiology, Plant Pathology,	1. Provide practical knowledge on the collection, culturing and identification of microorganisms (general and

		Angiosperm Taxonomy,Angiospermembryology, Palynologyandlab techniques.	pathogenic) from specific habitats and evaluation of their growth performances. 2. Acquire hands-on experience on the tissue organization in major land plants. 3. Acquire practical knowledge in the reproductive structures of major land plants and the developmental processes associated with them.
	BOT2C04	Cellbiology,Molecularbiologyandbiophysics	1. Develop the understanding on cells, their structural and functional organization and the systematic process of growth and development. 2. Provide insight on various sub cellular materials in the molecular level and the processes associated with them, resulting in various metabolic activities. 3. Develop understanding and skills on various Biophysical methods used in cellular studies and the processes associated with them. ● Get an idea of intracellular components and cell communication ● Understand the life cycle of cell ● Infer various aspects of cytoskelton ● Analyze the chromosome organization in eukaryotes ● Familiarize the DNA replication, repair and recombination ● Understand the basic concepts of mechanism of gene expression ● Familiarize the control of gene expression ● Familiarizes with biological instrumentation ● Understand the better use of microscopes in biology
	BOT2C05	Cytogentics, Genetics, Biostatistics, Plant breeding and evolution	1. Acquaint with cells and chromosomes, their structural and functional attributes, diversity and resultant manifestation on organisms. 2. Develop understanding of Mendelian Principles of Genetics. 3. Impart knowledge on human genome. 4. Provide an insight on the nature and type of data collection and its management. 5. Develop skills in data analysis using varied statistical software ● Understand the history of genetics ● Familiarize the concepts of linkage and

			genetic mapping ● Outline the basic concepts of quantitative genetics ● Understand the genetics behind cancer ● Familiarize the basic concepts of population genetics ● Understand the basic statistical methods for biological research ● Understand the basic concepts of plant breeding ● Familiarize the mechanism of hybridization in plants ● Outline the methods of breeding resistance in plants ● Familiarize the modern plant breeding methods. ● Infer the various theories of evolution ● Understand the process of evolution of plants
	BOT2C06	Plant Ecology, Conservation Biology, Phytogeography And Forest botany	1. Familiarity with various types of ecosystems and the ecological principles operating in each ecosystem. 2. Evaluate the threats associated with various ecosystems and an understanding of various managemPeangt estr2at3egoiefs 47 for their conservation. 3. Understand the nature and pattern of distribution of plant communities and the reasons underlying it. 4. Understand the nature and type of forests; their ecological as well as economic contribution and strategies for their management ● Have an idea about the major ecosystem of the world ● Understand the population ecology and community ecology system in the world ● Get meticulous knowledge in ecological succession and phytogeography ● Get knowledge in environmental pollution, global environmental problems, their mitigation and remedies and to acquire knowledge about the importance of biodiversity conservation ● Understand the concept of conservation of nature and natural resources ● To understand the importance of plants in

			environmental quality ● Understand the importance of forest and forest products
	BOT2L03	Practicalsofcellbiology,Molecularbiology,Biophysics,Cytogenetics	1. Demonstration of practical skills in the isolation of cell organelles and demonstration of cellular processes 2. Demonstration of practical skills in the isolation of genetic materials from cellular systems and to familiarize recent methods for their characterization. 3. Develop abilities in the conduct of various experiments related to the physical and chemical separation of biochemical components. 4. Demonstration of practical skills in the area of Cytogenetics and its logical reasoning. 5. Develop skills in analyzing experiments related to the course materials, their interpretation and reporting.
	BOT2L04	Practicals Of Genetics, Biostatistics, Plant Breeding, Plant Ecology, Conservation Biology, Phytogeography And Forest Botany	1. Develop skills in the statistical analysis of data, both manually and using statistical software. 2. Demonstration of practical skills in plant breeding and hybridization. 3. Develop abilities in the conduct of various experiments related to ecosystems evaluation and characterization. 4. Develop skills and abilities in assessing species composition and biotic interactions associated with heterogeneous ecosystems. 5. Demonstration of skills in the identification of phytogeographic areas, with special reference to forest biome. 6. Develop skills in evaluating the mandate of various organizations and their programmes in the priority areas specified in the course.
	BOT3C07	Plant Physiology, Metabolism And Biochemistry	1. Understand various physiological processes associate with plant systems. 2. Understand various metabolic processes linked to biological systems. 3. Acquire knowledge on the properties of biomolecules (primary and secondary) and to understand the biochemistry of their action.

			● Get an idea about the plant water relations ● Understand the transport of ions, solutes and other macromolecules ● Infer various aspects of photosynthesis. ● Understand respiratory metabolism in plants ● Analyze the nitrogen metabolism in plants. ● Familiarize the affects different types of stresses in plants ● Outline the basic knowledge in sensory photobiology ● Examine the various plant growth regulators ● Understand the structure and function of biomolecules ● Familiarize different types of secondary metabolites
	BOT3C08	Angiosperm Morphology, Angiosperm Taxonomy And Plant Resources	1. Acquaint with the structure and organizationof various plant organsand a detailed analysis on their origin and evolution. 2. Understand various principles and practices of Plant Systematics. 3. Acquire knowledge on the recent development in plant systematics and the institutions involved in it. 4. develop understanding on the history, occurrence, and botanical characteristics of various plant resources of commercial importance. ● Recognize concepts of taxonomic hierarchy and phylogeny of angiosperms.

			● Illustrate sources of taxonomic characters in solving taxonomic disputes. ● Recall the principles, rules and recommendations of ICN in plant taxonomy ● Conceptualize the plant classification system proposed by different taxonomists ● Develop critical understanding of the different tools in taxonomy ● Develop critical evaluation of taxonomic keys ● Recognize the importance of digital resources of taxonomy and virtual herbarium ● Enhance their observation capacity by dissecting different floral structures and to improve their taxonomic illustrations and floral imaging ● Critically evaluate the interrelationships and evolutionary trends of angiosperm families ● Understand the economic importance of plants and its commercial applications
	BOT3C09	Biotechnology And Bioinformatics	1. Understand the basic principles and practices and develop skills in the advanced areas of plant tissue culture. 2. Acquire knowledge on the recent techniques and developments in Genetic Engineering and the legal procedures underlying genetic manipulation. 3. Acquaint with the principles and applications of Bioinformatics and to acquire

			skills in the use of computer aided Bioinformatics tools. ● Get a thorough knowledge in plant tissue culture ● Familiar with genetic engineering and advanced tools Page 30 of 47 ● Get knowledge in genomic and proteomics ● Get basic knowledge in bioinformatics ● The students will be able to familiarize with social issues in biotechnology
	BOT3L05	Practicals Of Plant Physiology, Metabolism, Biochemistry, Angiosperm Morphology, And Angiosperm Taxonomy	1. Develop skills in conducting / demonstrating experiments related to various physiological processes in plants. 2. Demonstration of practical skills in the area of separation of biomolecules and their assays. 3. Develop abilities to test various biochemical components in plants using standard protocols. 4. Develop skills and abilities in assessing plant organs and to comment on their developmental processes. 5. Demonstration of skills in the collection, preservation and systematic elucidation of plant specimens to their respective families using conventional and modern methods.
	BOT3L06	Practicals Of Plant Resources, Biotechnology And Bioinformatics	1. Develop skills in the identification of plant specimens having commercial / economic value. 2. Develop skills and abilities in undertaking tissue culture protocols. 3. Develop skills and abilities in the separation of genetic materials from plant specimens. 4. Acquire skills in the use of computers for conventional applications and also for computational purposes using statistical software. 5. Demonstration of skills in using computer software relating to Bioinformatics purposes.
	BOT4E01	Genetics and Crop Improvement	1. Develop advanced understanding of various crops of commercial importance and their genetic characteristics. 2. Develop understanding of the genetic

			configuration of important crops and methods for its hybridization for the production of better varieties. 3. Provide insights on various farming systems and methods adopted for bringing sustainability. 4. Develop hands-on skills in the study of floral characteristics of major crops. 5. Develop skills for the identification of weeds, pests and diseases and the development of agents for their Control.
	BOT4E02	Pathology of Plantation Crops and Spices.	1. Develop advanced understanding of various concepts in Plant Pathology. 2. Provide insights on various crops plants, pests and methods used for the control of pests from various farming systems. 3. Understand various diseases associated with major plantation crops and analyze various methods adopted for their control. 4. Develop hands-on skills for the isolation of pathogens, analysis of disease cycles and measures for their control.

DEPARTMENT OF SOCIOLOGY

Programme Specific Outcome:- MA Integrated Sociology

● Getting an exposure to the fundamental concepts and theories in acquiring skills for sociological imagination
● Achieve critical sensibility towards social, economic and political situation and to develop critical thinking ability
● Exhibit oral and written communication skills in disseminating sociological knowledge
● Improve proficiency in applying sociology and enhance employability Broadly, three orientations can be delineated with reference to the teaching of sociology ➢ Social orientation (as in responsible citizenship education) ➢ Knowledge orientation (as in personality and skill development), ➢ Job orientation (as in vocational courses)

- Keeping these orientations in mind, the Board of Studies emphasizes the following as objectives of sociology education:
  - ➢ [a] to equip the students to critically understand and interpret social reality
  - ➢ [b] to generate in students a distinct sociological perspective on socioeconomic and cultural
  - ➢ reality
  - ➢ [c] to enhance the social sensitivity and sensibility of the students
  - ➢ [d] to help students acquire skills that will be useful to them in their personal and professional life.
- It is of the view that assessment should support and encourage broad instructional goals such as basic knowledge of the discipline of sociology including phenomenology, theories, techniques, concepts and general principles, encouragement of students' attributes including curiosity, creativity and reasoned skepticism and understanding the link of sociology to other disciplines. With this in mind it aims to provide a firm foundation in every aspect of sociology and to explain the modern trends in sociology.

Course outcome

Semester	Course Code	Course Name	Course outcome
I	SGY1B01:	BASICS OF SOCIOLOGY	● Comprehension of the uniqueness of the sociological imagination ● Recognizing the difference between sociology and commonsense ● Conceptualization of society in the abstract
			● Understanding the relation between the individual and society ● Understanding the parts and processes within society
II	SGY2B02	INDIAN SOCIETY: STRUCTURE AND TRANSFORMATION	● To develop a sociological perspective for understanding the dynamics of Indian Society ● To sensitive the changes occurred in the various institutions in Indian Society ● To aware the issues and challenges of contemporary society

III	SGY3B03	SOCIOLOGICAL THEORY: AN INTRODUCTION	● To provide an understanding of the historical condition in which sociology originated and developed as an independent academic discipline . ● To understand the intellectual and philosophical foundations of Sociological theories and contributions of Classical theorists to Sociology
IV	SGY4B05	INTRODUCTION TO SOCIAL RESEARCH	● To familiarise the nature and scope of social research ● To understand steps and methods of social research ● To distinguish the characteristics of qualitative and quantitative research
	SGY4B06	SOCIOLOGY OF KERALAM	● Recollect the social and cultural history of Kerala society ● Understand the major social transformation in Kerala and its implications in present society ● Analyses various socio cultural issues concerning Kerala society through sociological lens.
V	SGY5B07	SOCIAL ANTHROPOLOGY	● Understanding the basic concepts of Anthropology

			● familiarize with Anthropological studies in India by focusing on Tribal Communities in the country in general and in the state of Kerala in particular

	SGY5B08	SOCIOLOGY OF RURAL AND URBAN SOCIETIES	● Understanding major concepts and theoretical perspectives in urban sociology Familiarizing the views on urban social life ● Understanding the nature of urbanisation process in Indian context ● Perceiving the urbanisation process as a spatial transformation with a focus on Kerala scenario ● Achieve critical sensibility towards social, economic and political dimensions in
	SGY5B09	WOMEN IN CONTEMPORARY SOCIETY	● Understanding some major themes in gender knowledge ● Conceptual clarity regarding women's studies and feminism ● Grasp on structural issues faced by women ● Knowledge about factors affecting the status of women in Kerala over time ● Critical awareness regarding women empowerment in Kerala
	SGY5B10	ENVIRONMENT AND SOCIETY	● Learn the principles and major areas in the areas of sociology of environment. ● Understand the relationship between environment and human society. ● Comprehend the necessities of having environmental awareness.

			● Gain awareness of the various environmental issues confronting in our immediate surroundings.
	SGY5&6B:	PROJECT WORK	

VI	SGY6B11	INVITATION TO SOCIOLOGICAL THEORY	● Traces the transformation from social thought to Sociological theory ● Identifies the basic components of theory ● Develops a sociological thinking ● Recognizes the paradigmatic orientations in Sociology ● Evaluates Sociology as a humanistic discipline
	SGY6B12	SOCIAL PSYCHOLOGY	● Understanding of basic concepts in social psychology ● Understanding the basic psychological Process ● Aware the significance of attitude in developing social behavior ● Basic understanding on personality and its relation with social system
	SGY6B13	POPULATION STUDIES	● To provide a basic theoretical explanation of population studies and related concepts. ● To provide critical analysis of the population theories ● To analyse the changes in population in society
	SGY6B14	POLITICAL SOCIOLOGY	● familiarizing the theoretical and conceptual discussions on Power and Politics ● Understanding the dynamics of Power ● Critically evaluating the political process in India

	SGY6 B15	LIFE SKILL EDUCATION (ELECTIVE CORE COURSE FOR SINGLE CORE/SDE)	• To provide with the knowledge of necessary life skill for the application in everyday life • To enhance the quality of addressing issue relevant to the life situations • To enable the students to establish productive interpersonal relationships with others • To equip students for handling specific issues

Name of Programme: M.Com. Finance

POs		COs
PO-1	The candidate can acquire the qualification of NET/JRF and do M. Phil /Ph.D. and can become Assistant Professor in Govt. College/ Govt. Aided Colleges/Self Financing Colleges or Universities.	**MCM1C01: BUSINESS ENVIRONMENT AND POLICY** **Course Outcome:** • Analyse the environment of a business from the various internal and external perspectives • Evaluate how the economic environment and its configurations influence in business decision making. • Apply the role of New Economic Policy and the Economic reforms in the perspective of Business. • To make understand the various policies related to FDI &Multi-National Corporations. • To give an in-depth knowledge about the recent Government policies regarding Environment management. **MCM1C02 CORPORATE GOVERNANCE AND BUSINESS ETHICS** **Course outcome:** • To make an understanding about the concept of Corporate
PO-2	Can commence Business Incubation centres and can develop new platforms to connect the entrepreneurs and the general public.	

		Governance and the communication mechanism • To Apply the various Theories and Models of Corporate Governance and the recent initiatives in India and abroad • To make an understanding about the various committees on Corporate Governance and the Legal framework • Evaluate the role of various stakeholders, whistle blowing and the recent developments in India. • To create Important ethical principles in Business in the cultural diversity **MCM1C03: QUANTITATIVE TECHNIQUES FOR BUSINESS DECISIONS** **Course outcome:** • To remember and understand properties of probability distribution and to solve the problems • To apply hypothesis testing for validation and interpretation of the results • To evaluate the application of non-parametric tests for validation. • To understand the tool for finding the relationship between variables and its magnitude • To create soft skill knowledge for data analysis **MCM1C04: MANAGEMANT THEORY AND ORGANISATIONAL BEHAVIOR** **Course Outcome:** • To impart a thorough understanding about various concepts and theories in management and organisational behaviour. • Understand the various psychological process and different motivation theories which will influence the performance. • To evaluate the personality traits of human beings and various ethical issues in Organisational Behaviour. • To understand importance of group dynamics, need for work

		life balance and managing change. • To apply the various terms related to organisational culture and Techniques for managing organisational relationships. **MCM1C05: ADVANCED MANAGEMENT ACCOUNTING** **Course Outcome:** • To remember and understand the knowledge to use different methods of measuring financial and non-financial performance. • To measure and solve financial and non-financial performance-based business problems. • To understand and apply comprehensive performance management initiatives for organizations • Understand and apply the significance of risk and uncertainty in decision making. • To apply various techniques of interpreting Variances. **MCM2C06: ADVANCED CORPORATE ACCOUNTING** **Course Outcome:** • To understand the theory and practice of Corporate Financial Accounting • To create problem solving capacity in Corporate restructuring and liquidation • To understand skill in recognition, measurement and presentation of deferred tax • To understand insight into Accounting standards of IFRS, Ind AS, and Lease accounting • To evaluate different types of accounting **MCM2C07: ADVANCED STRATEGIC MANAGEMENT** **Course Outcome:**

		• To understand the Strategic Management Process and to provide basic idea about the Social and ethical issues • To understand and evaluate the Environment analysis and SWOC. • Evaluate the strategic options at Corporate level and the different growth strategies • To understand the Strategy implementation and different approaches in planning and allocating resources • To apply and evaluate the Strategy evaluation, tools and techniques used and processes with case studies **MCM 2C08: STRATEGIC COST ACCOUNTING** **Course Outcome:** • To understand the conceptual knowledge of Cost Accounting, comparison of cost accounting with other branches of accounting. • Provide students with a basic understanding of the different terminologies used in Cost Accounting and different types of cost • Understand the treatment regarding the application of process costing and treatment of Joint products and By products. • To understand and evaluate the practical application of Absorption Costing, Throughput Accounting, ABC Analysis and Transfer Pricing. • To evaluate the application of Productivity Management **MCM2C09: INTERNATIONAL BUSINESS** **Course Outcome:** • To study about the Theories of International Trade and

		reasons for internationalisation • Evaluate the International Business Environment opportunities and threats of Indian Companies • To understand the Strategy development in IB and the different business entry strategies. • To evaluate the role International economic situations in the development of Business. • To analyse the different strategies of internationalization and the contribution to Indian Course outcome economy. **MCM2C10: MANAGEMENT SCIENCE** **Course Outcome:** • To understand students with concepts of management science • To evaluate the application of various tools which support decision making process • To apply inventory management and managing the queue system in service sector • To evaluate and create the technique of project planning scheduling and controlling • To understand knowledge in share analysis and different strategies in game theory **MCM3C11: FINANCIAL MANAGEMENT** **Course Outcome:** • To understand the role of finance and finance manager in an organisation • To Evaluate and apply sources of financing and corresponding cost of capital • To Understand and evaluate working capital decisions • To understand and apply Capital structure and leverage

		analysis • To understand and apply dividend theory and dividend decisions **MCM3C12: INCOME TAX: LAW, PRACTICE AND TAX PLANNING I** **Course Outcome:** • To understand tax planning tips to individuals on the basis of residential status. • To understand and evaluate the computation of income under five heads and to apply tax planning tips for these five heads of income. • To understand and apply tax planning tips for Hindu Undivided family, set off and carry forward provisions and tax planning tips for individuals. • To remember and understand the powers of income tax authorities and should be able to calculate advanced tax liability and TDS of an individual. • To create ability to file the return of income of individuals and should be aware of different types of assessment. **MCM3C13: RESEARCH METHODOLOGY** **Course Outcome:** • To understand and apply different research approaches and methodologies • To evaluate and apply Population survey and sample survey – theories and techniques • To understand and apply the Data collection methods and enable them to conduct a comprehensive research. • To Evaluate the Measurement and scaling and the validation and reliability testing • To understand and evaluate Data processing, analysing,

		interpretation and report writing a create awareness about plagiarism **MCM3EF01: INVESTMENT MANAGEMENT** **Course Outcome:** • To understand the concept of risk, return, diversification and hedging • To understand and apply the different types of bonds and bond valuation • Provide thorough understanding and evaluation of fundamental analysis and technical analysis • To understand the measurement of portfolio risk, optimal portfolio, portfolio selection models • To understand and create portfolio management, portfolio evaluation and revision **MCM3EF 02: FINANCIAL MARKETS AND INSTITUTIONS** **Course Outcomes:** • To provide the students a sound information and knowledge of broad framework of financial markets and institutions. • To acquire knowledge in national and international commodity market • To understand various types financial instruments and their sale and buy back • To gain knowledge about the working of major financial institutions • To familiarize with different forms of foreign capital inflows and its role in Indian financial system **MCM4C14: FINANCIAL DERIVATIVES AND RISK MANAGEMENT**

		Course Outcome: • To understand and apply the terms and concepts of underlying risk management • To understand and evaluate growth and development of future. • To understand and apply the option trading and various strategies involved in it. • To understand about the pricing of options- call and put option • To evaluate and apply SWAP contract and pricing of different instruments under SWAP **MCM4C15: INCOME TAX: LAW, PRACTICE AND TAX PLANNING II** **Course Outcome:** • To understand and apply tax planning tips for partnership firm, AOP and BOI in India. • To understand and apply tax liabilities of cooperative society and trust and should also be able to advocate tax planning tips to them. • To understand and evaluate the tax liability of Companies including shipping companies. • To understand and evaluate the implications of tax on various managerial decisions • To understand and evaluate the tax liability of business units. **MCM4EF03: INTERNATIONAL FINANCE** **Course Outcome:** • Students should familiarize with the concept and significance of International Finance, IDA, IFC and ADB

		• Students should understand international financial markets , foreign exchange rate , its measurement and movements. • Students should acquire knowledge in exchange rate theories and models of exchange rate, risk management in foreign exchange • Students should develop knowledge in international capital budgeting ,asset liability management and foreign portfolio management • Students should acquaint knowledge in Working capital management, international cash and inventory management and international monetary investment. **MCM4 EF04: ADVANCED STRATEGIC FINANCIAL MANAGEMENT** **Course Outcome:** • To build an understanding among students about the concepts, vital tools and techniques used for financial decision making. • To understand the concept of capital structure planning and policies, and to find the value of firm. • To familiarise with the concept of lease financing and various methods of lease financing • To gain knowledge in theories of merger, different types of merger and the financial impact of merger • To understand take over strategy and procedure and regulations.

	Semester	Course code	Course/topic name related
	Semester	**Course Code**	**Course Name**
Employability	**I**	**MCM1C03**	**QUANTITATIVE TECHNIQUES FOR BUSINESS DECISIONS**
	I	**MCM1C05**	**ADVANCED MANAGEMENT ACCOUNTING**
	II	**MCM2C06**	**ADVANCED CORPORATE**

			ACCOUNTING
	II	**MCM2C07**	**ADVANCED STRATEGIC MANAGEMENT**
	II	**MCM 2C08**	**STRATEGIC COST ACCOUNTING**
	II	**MCM2C10**	**MANAGEMENT SCIENCE**
	II	**MCM3C11**	**FINANCIAL MANAGEMENT**
	III	**MCM3C12**	**INCOME TAX: LAW, PRACTICE AND TAX PLANNING I**
	III	**MCM3EF01**	**INVESTMENT MANAGEMENT**
	III	**MCM3EF02**	**FINANCIAL MARKETS AND INSTITUTIONS**
	IV	**MCM4C14**	**FINANCIAL DERIVATIVES AND RISK MANAGEMENT**
	IV	**MCM4C15**	**INCOME TAX: LAW, PRACTICE AND TAX PLANNING II**
	IV	**MCM4EF04**	**ADVANCED STRATEGIC FINANCIAL MANAGEMENT**
Entrepreneurship	**II**	**MCM2C09**	**INTERNATIONAL BUSINESS**
	IV	**MCM4EF03**	**INTERNATIONAL FINANCE**
Skill Development			
Professional Ethics	**III**	**MCM1C02**	**CORPORATE GOVERNANCE AND BUSINESS ETHICS**
	III	**MCM3C13**	**RESEARCH METHODOLOGY**

Gender	-	-	-
Human Values	**I**	**MCM1C04**	**MANAGEMANT THEORY AND ORGANISATIONAL BEHAVIOR**
Environment	**III**	**MCM1C01:**	**BUSINESS ENVIRONMENT AND POLICY**
Sustainability	-	-	-

DEPARTMENT OF CHEMISTRY

Programme Specific Outcomes (PSOs) – M. Sc Chemistry Programme

	Programme specific outcomes
PSO1	Provide theoretical background and develop practical skills for analysing materials using modern analytical methods and instruments.
PSO2	Inculcate a problem solving approach by coordinating the different branches of chemistry.
PSO3	Becomes professionally skilled for higher studies in research institutions and to work in Chemical industries
PSO4	In-depth knowledge helps to qualify in competitive exams

Programme Specific Outcomes (PSOs) – M. Sc Chemistry Programme

	Programme specific outcomes
PSO1	Development of skills on using softwares like Gaussian, Gamessetc which is useful in molecular modeling, drug designing, etc.
PSO2	Development of skills on using softwares like Chemdraw, Chemwindow, ISIS draw, etc which is useful in drawing purposes, structural predictions, etc.
PSO3	Training on computational chemistry
PSO4	Case study and analysis on any relevant issues in the nearby society(for example water analysis, soil analysis, acid/alkali content analysis, sugar content analysis, etc)
PSO5	Community linking programme relevant to the area of study(For example Training for society on soap/perfume making, waste disposal, plastic recycling, etc)

Course Outcomes

Semester	Course Code	Course Name	Course outcomes

I	CHE1C01	Quantum Mechanic sand Computational Chemistry	• CO1:Explain atomic structure based on quantum mechanics and explain periodic properties of the atoms
			• CO2:Understand the concept of quantum mechanics
			• CO3: Solve the problems related to 1D box
			• CO4:Explain role of operators in quantum
			• CO5:Understand the concept of Computational Chemistry
			• CO6:Detailed discussion of postulates of quantum mechanics– State function or wave function postulate, Born interpretation of the

			wave function, well behaved functions, or the normality of wave functions
			• CO7:Understand Quantum Mechanics of Translational & Vibrational Motions
			• CO8:Explain the Approximation Methodsin Quantum Mechanics
			• CO9:Simple calculations using Gaussian programme
			• CO10:ClassificationofComputationalChemistry methods
I	CHE1C02	Elementary inorganic chemistry	• CO1:Explaindifferentacidbasetheories
			• CO2:Classification of acids and bases as hard andsoft.
			• CO3:Chemistry of non-aqueous solvents
			• CO4:Understand Nuclear and Radiation Chemistry
			• CO5: **S**tudy of Chemistry of Nanomaterials
			• CO6:Chemistry of Transition and Inner Transition Elements
			• CO7: Structure of Zeolites and use of Zeolites as molecular sieves
I	CHE1C03	Structure and reactivityof organicCompounds	• CO1:Understand the Structure and Bonding in Organic Molecules
			• CO2:Preparation of aromatic and anti-aromatic compounds
			• CO3:Describereaction mechanism of organic reactions and various reaction intermediates
			• CO4: Conformational Analysis
			• CO5: Asymmetric Synthesis
			• CO6:Explain optical isomerism of compounds that do not contain an asymmetric carbon atom.
I	CHE1C04	Thermodynamics, kinetics, and catalysis	• CO1:To understand the concepts of thermodynamics and it's relation to statistical thermodynamics.
			• CO2:Understand Thermodynamics of Solutions
			• CO3:Understand Thermodynamics of Irreversible Processes
			• CO4:Study the Kinetics of reactions involving reactive atom sand free radicals
			• CO5:ExplainRice-Herzfeld mechanism and steady state approximation
			• CO6:Explain Principle of crossed molecular beams

I	CHE1L01 & CHE2L04	Inorganicchemistrypractical I&II	• CO1 **:** An ability to analyse the cation mixture
			• CO2:Ability to estimate the ions by complex ometric titrations
			• CO3Ability to estimation of compounds by intensity of colour using colorimetric methods
I	CHE1L02 & CHE2L05	Organic chemistry Practical I&II	• CO1- Familiarize the methods for the Separation and Purification of Organic Compounds
			• CO2-Ability to Separate and identify the components of organic binary mixtures
I	CHE1L03 & CHE2L06	Physical chemistry practical I &II	• CO1: To enable the students to develop analytical skills in determining the physical properties (physical constants).
			• CO2:To develop skill in setting up an experimental method to determine the physical properties
			• CO3:To understand the principles of Refractometry, Potentiometry and Conductometry.
II	CHE2C05	Group Theory and Chemical Bonding	• CO1: To understand the foundations of Group Theory & Molecular Symmetry
			• CO2:Familiarise the Representations of Point Groups& Corresponding Theorems
			• CO3: Enable the students to apply Group Theoryto Molecular Spectroscopy and Chemical Bonding
			• CO4: Study of Chemical Bonding in diatomic and polyatomic molecules.
II	CHE2C06	Coordination chemistry	• CO1:To predict the stability of Coordination Compounds by various effects.
			• CO2: Explain various theories of Bonding in Coordination Compounds
			• CO3:Demonstrate the Electronic Spectra and Magnetic Properties of Complexes
			• CO4:Characterization of Coordination Complexes
			• CO5: To elucidate Reaction Mechanism of Metal Complexes
II	CHE2C07	Reaction mechanism in Organic Chemistry	• CO1:To understand aliphatic and aromatic, nucleophilic and electrophilic substitution with mechanism and kinetics
			• CO2:To develop an ability to understand addition and elimination reactions with mechanism and stereo chemical aspect

			• CO3:To understand the competition between substitution and elimination reactions according to the conditions of reagents and substrate
			• CO4 : Students will be able to understand all the nucleophilic condensations reactions of carbonyl compounds
			• CO5 : To impart the students in depth knowledge about the basic concepts and theory of pericyclic reactions and to get an idea about the orbital overlap in chemical reaction
			• CO6 : To enable the students to acquire proper knowledge about photochemical reactions with mechanism
			• CO7: The students will be able to understand acyl-oxygen and alkyl-oxygen bond fission in ester hydrolysis according to the conditions.
II	CHE2C08	Electrochemistry, solid state chemistry, and Statistical Thermodynamics	• CO1:Describe Debye –Huckel equation , limiting and extended forms
			• CO2:Calculate effect of ionic strength on ion reaction rates
			• CO3:Compare the efficiency of electro chemical cells with heat engines
			• CO4:Explain the advantages and limitations of lead-acid, Ni-Cd and Ni-MH cells.
			• CO5:State the different theories of Hydrogen over voltage
			• CO6:Explain Polarography and dropping mercury electrode
			• CO7:Explain symmetry elements, symmetry operations and crystal systems.
			• CO8:Derive Braggs equation and explain the applications
			• CO9 :Explain the stoichiometric and non stoichiometric defects in crystals
			• CO10 :Explain Maxwell Boltzman statistics
			• CO11 :Explain classical and quantum theories of heat capacities of solids and Einstein's theory of atomic crystals
			• CO12 :Explain the relationship between Maxwell-Boltzman, Bose-Einstein and Fermi Dirac statistics

III	CHE3C09	Molecularspectroscopy	• CO1:To understand the theory and application of rotational spectra of diatomic and polyatomic molecules
			• CO2: To study the principle and major theories of vibrational, electronic and raman spectroscopy.
			• CO3:To study chemical shift, coupling , ,shieldingand desheilding in NMR specrtoscopy
			• CO4:To understand the basic principles of ESR and Mossbauerspecroscopy
			• C05 :To study CD and ORD.Also basic ideas of vibrational spectroscopy
			• CO6:To study interpretation of NMR spectra of organic molecules
			• CO7:To understand the advanced NMR techniques
			• CO8 :To study the principle behind Mass spectroscopy as well as Structural determination of organic compounds using spectroscopic techniques
III	CHE3C10	Organom-etallic & Bio-inorganic chemistry	• CO1:Toillustratethe use of 18 and 16 electron rule .also to study the properties and synthesis of metal carbonyls
			• CO2:Tostudy the structure and synthesis of Organometallic Compounds of Linear and Cyclicπ- Systems
			• CO3:To study major Organometallic Reactions and Catalysis
			• C04:To account the structure of carbonyl clusters using electron count rules
			• CO5:To understand electron transport in biological systems
			• CO6:To study Metallo enzymes and electron carrier metallo proteins.
III	CHE3C11	Reagents and Transformations in Organic Chemistry	• CO1:To study different types of reagents used for oxidation and mechanism of oxidations
			• CO2:To study different types of reagents used for reduction and mechanism of reductions
			• CO3:To study the applications of some specific reagents
			• CO4:To study the structure and synthesis of protein, DNA and RNA
			• CO5:To understand the basics of Hetero cyclic chemistry and supramolecular chemistry

			• CO6:To study different types of rearrangement reactions
III	CHE3E01	Synthetic organic chemistry(Electi ve)	• CO1:Toundertand the use of Reagents for Oxidation and Reduction
			• CO2:To study Synthetic applications of organometallic and organo-nonmetallic reagents including Reagents based on chromium, nickel, palladium, silicon, and born
			• CO3:To understand and study the named Reactions of carbonyl groups in aldehydes, ketones, carboxylic acids, esters, acyl halides, amides.
			• CO4:To study different Coupling Reactions
			• CO5:TO understand how to carried out a multy step synthesis
			• CO6:Generalprinciplesof retrosynthetic analysis. Synthons and reagents, donor and accept or synthons, umpolung, protecting group chemistry and functional group interconversions
IV	CHE4C 12	Instrumental Methods ofAnalysis	• CO1:To treat Statistical data by f-test,t- test and q test
			• CO2:To understand different analytical techniques
			• CO3:To understand potentiometry, ion selective electrodes & polarography
			• CO4:To study the principle behind amperometry, coulometry and anodic strippingvoltammetry
			• CO5:To study the instrumentation of spectrophotometry, nephelometry and turbidometry, fluorimetry, UV-visible, IR spectrophotometry AES and AAS
			• CO6:To study the Theory, instrumentation and applications of:- Atomic fluorescence spectrometry, X-ray methods- X-ray absorption and X-ray diffraction, photoelectron spectroscopy, Auger, ESCA. SEM, TEM, and AFM
			• CO7:To study the Theory, instrumentation and applications of TG,DTA,DSC ,and thermometric titrations
			• CO8:To understand the principle and applications of different chromatographic techniques

IV	CHE3L7 & CHE4L10	Inorganic ChemistryPractical III &IV	• CO1:To familiarize the Estimation involving quantitative separation of suitable binary mixtures of ions in solution by volume tricolor imetricor gravimetric methods .
			• CO2:To understand Colorimetric estimations of Ni, Cu, Fe and Mo, after separation from other ionsin solution by solvent extraction
			• CO3:To understand how to determine the Hardness ofwater
			• CO4: Preparation of inorganic complexes
IV	CHE3L8 & CHE4L11	Organic Chemistry Practical III & IV	• CO1:To study the Determination of Acid value, iodine value and saponification value of oils
			• CO2:To study how to Extract chlorophyll by TLC
			• CO3:Practicalapplication of PC and TLC, preparation of TLC plates, activation, identification of the following classes of compounds using one-and two-dimensional techniques. Identification by using spray reagents
IV	CHE3L9 & CHE4L12	Physical ChemistryPractic alIII & IV	• CO1:Determination of specific reaction rate and Arrhenius parameter of of acid hydrolysis of anester (methylacetateor ethyl acetate) and concentration of the given acids.
			• CO2:Verification of Langmuir adsorption isotherm
			• CO3:Determination of phase diagram of aternary liquid system
			• CO4:Determination of molecular mass of absolute (urea, glucose, canesugar, mannitol)by studying the depression in freezing point of a liquid solvent (water, benzene)
			• CO5:Determination of specific rate of inversion of cane sugar in presence of HCL.
			• CO6:Investigation of complex formation between Fe(III)and thiocyanate.
			• CO7:Single point energy alculations of simple molecules like H_2O and NH_3 at the HF/3-21G level of theory.

IV	CHE4E06	Naturalproducts& PolymerChemistry (Elective)	• CO1:To understand the Classification and isolation of Natural Products & essential oils
			• CO2:To study the the Classification and structure elucideation of some terpenoids and steroids
			• CO3:To study the Classification and structure elucideation of alkaloids and flavanones
			• CO4:To understand different types of dyes and pigments
IV	CHE4E08	Organometallic Chemistry	• CO1:To understand main group and transition metal organometallics
			• CO2:To study Bonding and reactions of metal carbonyls
			• CO3:To study the synthesis, Structure, reactivity and applications of main group or ganometallic compounds. Metalcomplexes of NO,H_2,CS,RNC and Phosphines Metalcarbenes and carbynes
			• CO4:To study the structure &bonding of organometallic pi complexes
			• CO5:To understand the Applications of organometallic compounds inorganic synthesis and homogeneous catalysis
			• CO6:To study different organometallic reactions
			• CO7:To understand the application of organometallic compounds in heterogeneous catalysis
			• CO8:To study about organometallic polymers
IV	CHE4P01	Research Project	• CO1:To understand the scientific methods of research project.
			• CO2:To apply the scientific method in life situations.
			• CO3:To analyse scientific problems systematically.

DEGREE OF MASTER OF VOCATION (M. Voc) IN SOFTWARE

M. voc Software Development (2021 Admissions) Programme

Course Outcomes

Semester	Course Code	Course Name	Course outcomes
I	**GEC1SD01**	**Communication Skills Development**	• CO1-Apply business communication theory to solve workplace

			communication issues.
			• CO2- Display competence in oral, written, and visual communication.
			• CO3- Communicate effectively with colleagues in meetings, prepare agenda, minutes, and memos, and write different types of business letters, tenders, and quotations
			• CO4 - Prepare resumes, job application cover letters, and effective PowerPoint presentations
I	**SDC1SD01**	**OBJECT ORIENTED PROGRAMMING WITH JAVA AND SQL**	• CO1-Understand the basics of programming to write simple programs in java and understand the syntax and semantics of database programming using SQL.
			• CO2- Apply the programming structures to write simple/intermediate programs and debug it using exception handling.
			• CO3- Design and create intermediate/complex solutions using advanced java concepts
			• CO4-Analyze and create database programming aspects to design and manage robust databases and synthesize efficient queries.

I	**SDC1SD02**	**PHP PROGRAMMING**	• CO1- Learn how to make dynamic web applications using PHP
			• CO2 - Write PHP scripts to handle HTML forms and regular expressions including modifiers, operators, and meta characters.
			• CO3 - Create PHP programs that use various PHP library functions, and that manipulate files and directories.
			• CO4 - Analyse and solve various database tasks using the PHP language.
			• CO5 - Learn how to Test and debug a PHP application
I	**SDC1SD03**	**INTRODUCTION TO MOBILE APPLICATION DEVELOPMENT AND WEB TECHNOLOGIES**	• CO1 - Student knows mobile devices and mobile platforms
			• CO2 - Understand the basic concepts for mobile platforms and their supporting technology, and classify the different architectures used in server/client/cloud systems
			• CO3 - Evaluate the architecture used for web-based development and deployment

I	**SDC1SD04**	**ANDROID APP DEVELOPMENT FOR BEGINNERS**	• CO1 - Understand Java and Android development framework components and Java/Android Development Tools
			• CO2 - Evaluate the core building blocks of android and android lifecycle architecture
			• CO3 - Use Intent, Broadcast receivers and Internet services in Android App.
			• CO4 - Design and implement Database Application and Content providers
			• CO5 - Evaluate different messaging constructs and themes in android.
			• CO6 - Discuss various security issues in Android platform
I	**SDC1SDL1 – LAB 1**	**PHP PROGRAMMING - LAB**	• CO1 - Develop simple application using server side PHP programming and database connectivity
			• CO2 - Learn to do validation using JavaScript objects by applying different event handling mechanism.
			• CO3 - Use AJAX programming technique to develop RI

I	**SDC1SDL2-LAB 2**	**SOFTWARE LAB I (ANDROID I, JAVA&SQL)**	• CO1 - Create advanced applications based on Java
			• CO2 - Create advanced databases based on SQL and SQLite
			• CO3 - Design and Create advanced projects based on Android
	GEC2SD02	**PROFESSIONAL SKILLS DEVELOPMENT (TRAINING PROGRAMME)**	• CO1 - Understand and apply skills in interpersonal relationships in the workplace
			• CO2 - Apply productivity improvement techniques at work.
			• CO3 - Understand and demonstrate knowledge of problem- solving and creativity techniques.
			• CO4 - Understand demonstrate skills in public speaking, oral presentations, and teamwork.
II	**SDC2SD05**	**DATABASE AND BACKEND TECHNOLOGIES**	• CO1 - Analyze different types of DBMS and Employ it in real- life problems
			• CO2 - Evaluate different means of advanced DBMS functions and implement them in the production environment.

			• CO3 - Design and create databases based on MongoDB tool.
			• CO4 - Understand the concepts of Big Data and its application.
			• C05 - Design and create queries based on triggers, aggregate functions, stored procedures, SQL joins, DDL, DML, and views (Create).
II	**SDC2SD06**	**ADVANCED JAVA PROGRAMMING**	• CO1 - Get knowledge about JVM architecture
			• CO2 - Be able to write advanced Java Programs using Hibernate, Spring technologies
			• CO3 - Be able to develop Spring based applications
			• CO4 - Get knowledge about J2ME applications
II	**SDC2SD07**	**ANDROID APP DEVELOPMENT-ADVANCED**	• CO1 - Describe Android platform, Architecture and features
			• CO2 - Design MVC architecture.
			• CO3 - Solve problems using SQLite and Content Providers
			• CO4 - Use Intent, Broadcast receivers and Internet services in Android App.

			• CO5 - Design and implement Database Application and Content providers.
			• CO6 - Use multimedia, camera and Location based services in Android App.
			• CO7 - Discuss various security issues in Android platform
			• CO8 - Create solutions based on the REALM framework.
II	**SDC2SDL3 LAB3**	**ADVANCED JAVA - LAB**	• CO1 - Able to do advanced level programming in Java
			• CO2 - Able to do a small website using Java
II	**SDC2SDL4 LAB 4**	**SOFTWARE LAB II (ANDROID II AND DATABASE)**	• CO1 - To have a review on concept of Android programming. • CO2 - To learn Android Programming Environments.
			• CO3 - To practice Design Solution based on advanced android concepts.
			• CO4 - To learn GUI Application development in Android platform with XML
			• CO5 - To apply fundamentals of database concept and entity

			relationship model in database applications.
II	**SDC2SDL5**	**MINI PROJECT / INTERNSHIP [Android App Development)**	• CO1 - Identify the requirements for the real world problems
			• CO2 - Study and enhance software/ hardware skills.
			• CO3 - Demonstrate and build the project successfully by hardware requirements, coding, emulating and testing
			• CO4 - To report and present the findings of the study conducted in the preferred domain
			• CO5 - Demonstrate an ability to work in teams and manage the conduct of the research study
			• CO6 - Evaluate client requirements efficiently
			• CO7 - Design software requirement specifications accurately
			• CO8 - Design solutions based on SRS, and design principles
III	**GEC3RM04**	**RESEARCH METHODOLOGY**	• CO1 - To enable the students to roll in to research level areas
			• CO2 - Develop to make use of online software tools
III	**SDC3SD08**	**PROGRAMMING WITH SWIFT**	• CO1 - Define key programming terms relevant to Swift and IOS programming.

			• CO2 - Understand the operators, data structures, inheritance, and error handling in Swift
			• CO3 - State the purpose of the Apple developer tools, such as Xcode, Instruments, debugger, analyser, and iOS Simulator.
			• CO4 - Create programs based using class, methods, protocols, generics, flow control, operators, and functions.
			• CO5 - Analyze access control and enumeration.
			• CO6 - Demonstrate programming best practices in Swift
			• CO7 - Examine and subdivide app functionality into properly designed components
III	**GEC3SD03E 1**	**MOBILE AND WIRELESS SECURITY**	• CO1 - Acquire experience and capability to team work
			• CO2 - Acquire solid knowledge on mobile networks and mobile security
			• CO3 - Become familiar with wireless systems and standards
			• CO4 - Able to get an idea about the framework of mobile handset hardware design

III	**SDC3SD10**	**MACHINE LEARNING**	• CO1 - Develop an appreciation for what is involved in Learning models from data
			• CO2 - Understand a wide variety of learning algorithms
			• CO3 - Understand how to evaluate models generated from data
			• CO4 - Apply the algorithms to a real problem, optimize the models learned and report on the expected accuracy that can be achieved by applying the models
III	**SDC3SD11**	**IOS APP DEVELOPMENT-FUNDAMENTALS**	• CO1 - Describe Android platform, Architecture and features
			• CO2 - Apply the Cocoa framework for iOS development
			• CO3 - Understand the fundamentals of iOS.
			• CO4 - Use Intent, Broadcast receivers and Internet services in Android App.
			• CO5 - Design and implement Database Application and Content providers.
			• CO6 - Evaluate and create Story Board, MVC, Protocols and Delegates, View System, Controllers, and devise solution based on it

			• CO7 - Design and create projects based on multi-scene storyboards, toolbars, and pickers.
III	**GEC3SD04E8**	**PROGRAMMING WITH PYTHON**	• CO1 - Understand the fundamentals of Python and its environment
			• CO2 - Understand syntax and semantics and advanced python integration
			• CO3 - Understand advanced Class and Object-Oriented features and its implementation
			• CO4 - Develop application using statistical and analytical features
			• CO5 - Design solutions based on visualization
III	**SDC3SDL6 : LAB 6**	**ANDROID APP DEVELOPMENT - LAB**	• CO1 - Experiment on Integrated Development Environment for advanced Android Application Development.
			• CO2 - Design and Implement User Interfaces and Layouts of Android App in advanced level.
			• CO3 - Use Intents for activity and broadcasting data in Android App.
			• CO4 - Design and Implement Database Application and Content Providers.

			• CO5 - Experiment with email, Camera and Location Based service and animations.
			• CO6 - Develop Android App with Security features
III	**SDC3SDL7 – LAB 7**	**SOFTWARE LAB III (IOS AND SWIFT)**	• CO1 - Develop projects using the iOS framework
			• CO2 - Develop solutions based on advanced iOS frameworks
			• CO3 - Deploy Swift based projects
IV	**SDC4SDTP**	**TERM PAPER**	• CO1 - To enable the student to the techniques of literature survey
			• CO2 - To acquire the skill of presentation
IV	**SDC4SDL8**	**INTERNSHIP & PROJECT**	• CO1 - An industry ready software professional at the exit point
			• CO2 - Able to become a part of the industry through the whole semester internship in the industries
			• CO3 - Experience in handling Live projects