



Program Outcomes and Course outcomes

Programme name
MBA
MCA
Integrated MCA
M.Sc. Molecular Biology & Genetic Engineering
B.Com (Finance & Taxation and Computer Applications)
B.Sc. Botany & Biotechnology Model III (Double Main)
BBA
BCA
BSc Psychology



Master of Business Administration (MBA)- Program outcomes

PO1. Apply the knowledge of management theories and practices to solve business problems.

PO2. Foster Analytical and critical thinking abilities for data-based decision making.

PO3. Develop value-based leadership ability.

PO4. Understand, analyze and communicate global, economic, legal and ethical aspects of business.

PO5. Lead themselves and others in the achievement of organizational goals, contributing effectively to a team environment.

PO6. Foster social and ethical values in their career and enterprises.

Master of Business Administration- Course outcomes			
Semester 1			
Course Name	Course Code	CO Number	COs
Principles of management	MBA010101	CO1	define concepts in management and Organisational Behaviour
		CO2	explain the processes involved in management and Organisational Behaviour
		CO3	apply the concepts and 'processes of management and Organisational Behaviour in specific situations
		CO4	analyse causes and motives of behaviour in individuals and groups working in organisations.
Business Communication	MBA010102	CO1	Define and elaborate the basic processes and concepts of managerial or business communication
		CO2	Describe the strategies for effective communication and the techniques to use persuasive and professional language in speech and writing
		CO3	Analyze personal communication-verbal and non-verbal, formal and informal to identify specific areas for improvement
		CO4	Evaluate organizational communication that effectively use presentations, reports, and mass communications

Managerial Economics	MBA010103	CO1	*Define the terms used in micro economics given in the course.
		CO2	Explain how the concepts from micro economics operate in business
		CO3	Apply the concepts from micro economics in business environment
		CO4	Analyze how the different aspects of demand, supply, consumer behaviour, market structure cost and price operate in the functioning of firms
Accounting for Management	MBA010104	CO1	Define all the key terms and terminologies in accounting, costing and management accounting. List down the various branches of accounting, preparation of financial statements, *different types of ratios, cost, budgets, accounting software
		CO2	(a). Describe the various techniques and tools in financial accounting, costing and management accounting. (b). Explain the concepts of inflation accounting, responsibility accounting, forensic accounting, ratio analysis, financial statement analysis, variance analysis
		CO3	Evaluate the financial performance from the financial statements using relevant ratios and also cost related data
		CO4	Develop the basic books of accounts, financial statements, set of business transactions
Quantitative Methods	MBA010105	CO1	Explain the basic concepts, tools and techniques of statistics commonly used in business decision making processes.
		CO2	Apply these statistical methods in various business scenarios.
		CO3	Analyze statistical data in order to establish relationship between dependent and independent variables pertaining to various business situations
		CO4	Conclude statistical inferences in relation to business decision making.
Legal Environment of Business	MBA010106	CO1	List out the various legal provisions and regulations available for the smooth conduct of business
		CO2	Explain the various legal provisions available.
		CO3	Apply these provisions in solving problems in real life business situations
		CO4	Analyze the importance of laws and its suitability for carrying out the business operations .
Environment Management	MBA010107	CO1	Define concepts in environment management in the light of global, economic, legal and ethical aspects of business.
		CO2	Describe the processes involved in environment management in the achievement of organizational, societal and national goals.

		CO3	Apply the concepts and processes of environment management to solve business problems.
		CO4	Analyse the impact of the natural, macro-economic, political and legal environment and its impact on Indian economy.
Semester 2			
Financial Management	MB010201	CO1	Define and relate the fundamental terms used in financial management.
		CO2	Explain the objectives, functions, concepts, theories and principles of financial management along with their limitations and assumptions, if any, with clarity and accuracy.
		CO3	Identify the relationship of financial management with the business environment and the role of financial Manager.
		CO4	Analyze the best Investment, Financing or Dividend proposals based on theoretical techniques/ approaches using practical cases.
Marketing Management	MB010202	CO1	Define the basic concepts, principles & terminologies in marketing
		CO2	Explain the marketing strategy, marketing program & its relevance to upkeep the social values in the organisation
		CO3	Analyze the marketing strategy at different PLC stages emphasizing STP & the buying behaviour
		CO4	Design a marketing plan for a given product to create customer value
Human Resources Management	MB010203	CO1	Define concepts in Human Resource management in the light of global, economic, legal and ethical aspects of business.
		CO2	Describe the processes involved in Human Resource Management in order to lead themselves and others in the achievement of organizational goals..
		CO3	Apply the concepts and processes of HRM to solve business problems
		CO4	Analyse problems involving people working in organisations towards achieving organisational goals.
Operations Management	MB010204	CO1	Define all the important terms used in Operations Management
		CO2	Describe the concepts, theories, practices and strategies used in context of Operations Management in organizations
		CO3	Analyze the various operational strategies in process and product design in manufacturing and service organization
		CO4	Apply the concepts and methodology to design various activities on product/process development

Management Science	MB010205	CO1	Recall the basic concepts and scope of operations research.
		CO2	Summarize various optimization models commonly used in business decision making processes.
		CO3	Solve data using various Scientific tools and models in OR
		CO4	Analyze the outcomes and propose critical business inferences in relation with decision science
Management Information Systems & Cyber Security	MB010206	CO1	Recall different types of information systems in organizations used at different levels.
		CO2	Classify and illustrate the information systems based on functional requirements of the organization.
		CO3	Apply the knowledge of information systems to aid decision making at various levels in the organization.
		CO4	Analyze the challenges in strategic investment in IT as well as security issues relating to the use of information systems.
Business Research methods	MB010207	CO1	Define the basic terms in research like research design, research problem, sampling, data, scales and hypotheses
		CO2	Explain the research process, the types of research, the methods of research design, the scaling methods, measurement, data collection methods and the format of the research report
		CO3	a. Identify and develop a research problem b. Choose a research design and construct a structured questionnaire
		CO4	Create a research proposal, do an independent research study and submit a final research report with the analysis using SPSS.
Entrepreneurship Development	MB010208	CO1	a. Define all the key terms related with Entrepreneur & entrepreneurship. b. List various steps in entrepreneurial process and key variables in success/ failures of entrepreneurship
		CO2	a. Describe the process, concepts, strategies in entrepreneurship and methods of project appraisal. b. Explain the characteristics, types of entrepreneurship and role of government policies & institutes for SMEs
		CO3	Analyze the opportunities and challenges of Entrepreneurial growth in India and reasons for industrial sickness based on various case studies
		CO4	Design a pitch deck for a startup using Ratan Tata's Pitch Deck template (Published on Dec.2019)

Semester 3

Big Data & Business Analytics	MB010301	CO1	Define the key terminologies associated with big data and the different types of analytics – descriptive, predictive and prescriptive
		CO2	Explain the importance of data and various analytics in the practical scenario along with the different techniques like classification and clustering
		CO3	Choose the appropriate tools for analyzing data based on its nature and objectives
		CO4	Analyze data using different software like SPSS& R and interpret them for the decision making process
Business Ethics & Corporate Governance	MB010302	CO1	Define the terms used in describing ethics, Indian ethos and corporate governance given in the context of the course.
		CO2	Explain the concepts from ethics, Indian ethos and corporate governance
		CO3	Apply the concepts learned in an Indian business environment
		CO4	Analyze the functioning of firms on the basis of the values of ethics, ethos and ideals of good governance as applicable.
Security Analysis and Portfolio Management	MB80 03/0401	CO1	Define the basic terms related with investment decision making and portfolio management
		CO2	Compare and interpret the different types of deals, trading and settlement processes and techniques of investment decision making like technical analysis and fundamental analysis
		CO3	Apply the theoretical concepts of SAPM in real market like situation
		CO4	Analyze and evaluate the various models of portfolio management like CAPM and Sharpe's model
Management of Banks and Financial Institutions	MB80 03/0403	CO1	a. Define all the key terms related with banks, banking system and banking technology. b. List down different types of banking, accounts, customers, laws and types of documents required for credit.
		CO2	a. Describe the functions of banks, NBFIs, Principles of lending, ALM, NPA and various laws related to debt recovery. b. Explain various aspects of Financial inclusion, Priority sector lending, Responsibilities of banks & customers, Credit appraisal, Risk calculations and Miscellaneous provisions.
		CO3	3. Analyze the opportunities and challenges of the banking industry and recent trends.

		CO4	4. Evaluate the banking performance from the financial statements using important tools.
Services Marketing	MB81 03/0403	CO1	Define the basic concepts in services marketing
		CO2	Explain the different principles, theories and conceptual frameworks used in services marketing
		CO3	Identify the services marketing concepts in a real business environment
		CO4	1. Analyse the marketing strategies used by firms in various industries using the various concepts learnt in services marketing.
Digital and Social Media Marketing	MB81 03/0404	CO1	1. Define basic concepts, terms and techniques in the practice of digital marketing.
		CO2	2. Explain the processes and procedures involved in using digital tools in digitally organized business firms.
		CO3	3. Analyze online presence, social media campaigns, customers and competitors for adapting and innovating marketing pursuits and programs
		CO4	4. Develop suitable digital strategies for marketing and communication of products and services by integrating & optimizing the use of online & offline media
Training and Development	MB82 03/0401	CO1	Recall the basic concepts involved in training, development and career development activities in an organization
		CO2	Explain the process of identification of needs for training, the methods, evaluation and how it integrate with the career development plan
		CO3	Analyze the various T & D initiatives conducted in organisations
		CO4	Design a training programme with objectives, course content, training methods, budget and evaluation of the training programme
Organisational Change and Transformation	MB82 03/0403	CO1	Define and list out the various terminologies associated with change, development, interventions and models
		CO2	Explain the various concepts of change management , organizational development, intervention strategies and transformation
		CO3	Apply these provisions in solving problems in related to change
		CO4	Analyze the importance and suitability of the various interventions for going ahead with a change
Supply Chain Management	MB83 03/0401	CO1	Define the Terms, concepts, terminologies used in supply chain management

		CO2	Describe the concepts, processes, principles, decisions, metrics, techniques and tools used in supply chain management
		CO3	Apply Supply chain data techniques to design supply chain models and distribution channels
		CO4	Analyse supply chain management solutions in typical decision making areas in supply chain management like location, procurement, inventory, transportation and network des
Total Quality Management	MB83 03/0402	CO1	Define all terms used in TQM
		CO2	Describe the concepts, theories, practices and strategies used in context of quality management in organizations.
		CO3	Apply quality management methods to solve business issues pertaining to quality
		CO4	Analyze the industry best practices pertaining to quality aspect globally
Semester 4			
Strategic Management	MB010401	CO1	Define the terms used in strategic management
		CO2	Explain the concepts of strategic management
		CO3	Apply the strategic management concepts in examples of firms
		CO4	Analyses role of strategic management in the success and failures of firms
Product and Brand Management	MB81 03/0406	CO1	Define the basic concepts in product & brand management-product mix, product line, brand equity, brand personality
		CO2	Explain the strategies and decisions involved in product planning & development as well as brand building process
		CO3	Analyze the product and brand management techniques for a diverse group of market offerings
		CO4	Design bbrand architecture connecting the different elements of a brand by applying branding principles and marketiing communication concepts
Consumer Behaviour	MB81 03/0408	CO1	Define the basic concepts and principles in consumer behaviour
		CO2	Explain the different principles, theories and conceptual frameworks used in consumer behaviour
		CO3	Apply the consumer behaviour conceptsin specific marketing situations
		CO4	Develop a marketing strategy as a team for a specific consumer group including all concepts learnt.
Behavioural Finance	MB80 03/0406	CO1	Recall the origins, key concepts and theories realting to behavioural finance

		CO2	Discuss the various anomalies in the market giving rise to behavioural bias of professional investors trading
		CO3	Apply the concepts to frame wealth management plans for investors based on behaviour analysis
		CO4	Analyse factors behind a particular behaviour of an investor and interpret the reasons for the different biases of investors
Management of Financial Services	MB80 03/0408	CO1	Define the terminologies and concepts pertaining to financial services without any
		CO2	a. Explain the basic theoretical framework with regard to the financial system and its technology. b. Summarize the procedural aspects of various financial institutions. c. Compare the various financial services/financial institutions. d. Describe the process and legal framework for various Insurance services, Asset/Fund based financial services and Fee-based/Advisory services.
		CO3	Apply the knowledge of the principles, theory and techniques in the management of financial services for decision making using available data with suitable assumptions.
		CO4	Analyze companies in the financial services industry and make inferences using available data with suitable assumptions.
Counseling Skills for Managers	MB82 03/0408	CO1	Define the fundamental concepts, theories & terminologies in Counselling
		CO2	Explain the competencies of the Counsellor & the different theoretical approaches that can be used in different situations.
		CO3	Analyze the application of the Counselling concepts in organizational contexts and to suggest appropriate counselling strategies to be executed so as to preserve the social & ethical values of the organization
		CO4	Design suitable intervention strategy after analyzing the clients' characteristics and problems
Leadership for Managerial Performance	MB82 03/0410	CO1	Define and list out the terminologies and concepts associated with leadership for managerial excellence
		CO2	Explain the various concepts of leadership, approaches, styles and role of effective leadership in organizations
		CO3	Apply these knowledge in understanding the various styles of leadership and importance of the same in organizations

		CO4	Analyze the importance women in leadership and also comprehend the issues related to Leadership and the Status of Women Leadership
Industrial Safety & Occupational Health	MB83 03/0406	CO1	Define and list out the various terminologies associated with industrial safety and occupational health.
		CO2	Explain the various concepts , processes and principles of industrial safety occupational health
		CO3	Apply the knowledge of these provisions in solving problems in related to the same
		CO4	Construct a suitable safety system / model for a company using the knowledge gained through this course
Global Operations and Logistics Management	MB83 03/0407	CO1	Define all the important terms and Global strategies used in Global Operations & Logistics
		CO2	Describe the concepts, theories, practices used in operations & Logistics Management in organizations.
		CO3	Design the Global logistics network and the risks involved with context.
		CO4	Analyze the role of Information system related to Global Operations & Logistics Management and its scope globally.

Master of computer application- Program outcomes

Programme Educational Objectives (PEOs)

PEO1: Evolve as globally competent professionals possessing integrative skills for developing innovative solutions in multidisciplinary domains.

PEO2: Adapt themselves to lifelong learning through proficient activities on latest technology trends needed for a successful career.

PEO3: Formulate themselves with Ethical Attitude, Effective Communication Skills and admit as committed empathetic citizens towards the requirements of the society.

PEO4: Develop ability to demonstrate team work with the flexibility of analytical reasoning for solving time critical problems and robust human values for responsible professionals.

PEO5: Become an entrepreneur who can provide solutions and develop software products for enterprise needs.

PEO6: Gain versatile knowledge through real-time projects, workshops and seminars and provide a sustainable competitive approach R&D and meeting industry needs.

PEO7: Comprehend cross cultural, societal, professional, legal and ethical issues prevailing in the Industry.

Programme Outcomes (POs)

PO1: Communicate Effectively:

Inculcate effective communication skills combined with professional & ethical attitude with the computing community and also the society by comprehending and writing effective reports and documentation, making effective presentations and providing and receiving clear instructions.

PO2: Individual & Team Work:

Function effectively in diverse teams as team leader and team member on multidisciplinary projects to demonstrate computing and management skills.

PO3: Problem Analysis:

Identify, critically analyze and formulate complex problems in multidisciplinary domains reaching substantiated conclusions using first principles of Mathematics, Sciences and Engineering.

PO4: Computational Knowledge:

Relate & apply fundamental knowledge of computing technology and relevant domains for the conceptualization of models from defined problems appropriate to the discipline.

PO5: Design and Development of Solution:

Design, implement and evaluate complex business scenarios and contemporary issues into desired needs based solutions with a passion for quality, competency and holistic approach.

PO6 : Solving Complex Computing Problems:

Use problem solving skills including design of experiments, analysis and interpretation of information and synthesis of the knowledge to unravel multifaceted industrial problems.

PO7 : Modern Tool Usage:

Create, select and apply appropriate skills, techniques, resources and modern engineering tools to solve social, cultural and industrial issues with global standards.

PO8 : Research and Lifelong Learning:

Engage in continuous learning as an expert by applying research based knowledge and methodologies to design, analyze and interpret data for finding the Solutions for complex problems by applying modern technological tools.

PO9 : Project Management and Finance:

Demonstrate knowledge and understanding of the engineering and management principles with computing skills to manage and estimate projects in multidisciplinary environments.

PO10 : Entrepreneurship:

Find out the right opportunity for the utilization of innovative ideas and entrepreneurship to make value and wealth for the betterment of the individual and the society at large.

PO11 : Social, Cultural, Environmental, Legal and Ethical Concern(s):

Recognize environmental, social, cultural, legal, ethical and cyber issues involved in the use of technology and other consequential responsibilities relevant to professional practice with an understanding of green environment initiative.

Programme Specific Outcomes (PSOs)

PSO1: Solidify foundation of mathematics, computer science and problem solving methodologies for effective implementation in real life applications.

PSO2: Familiarize students about principles of Software Engineering and Project Management with appropriate data modeling concepts and latest technologies.

PSO3: Use of recent technologies, skills and knowledge for the design and development of applications in the computing discipline.

PSO4: Inculcate employability and entrepreneurship skills among students who can contribute innovative and advanced solutions for the important life problems.

PSO5: Understand the concepts of Network and communication technologies, social network and other related aspects.

Master of computer application- Course outcomes			
Course Name	Course Code	CO Nos	Course Outcome
Semester 1			
Mathematical & Statistical Foundation for Computer Applications	MCACT101	1	Understand the basics of Set Theory, Relations and Functions and their application in the Computer Science field.
		2	Apply the Rules of Inference to solve problems.
		3	Familiar with the basic concepts of Probability Theory and Sampling Techniques.
		4	Design a probability model/ test of significance to solve a real-world problem.
Digital Logic & Computer Organization	MCACT102	1	Define the fundamental concepts of digital computer and computers organization
		2	Describe the theory and architecture of digital computer and its fundamental parts including parallel processing and pipelining
		3	Determine the coordination and the role of different components in the computer for a program execution
		4	Solve problems binary arithmetic, simplifying digital circuits, Boolean expressions, combinational and sequential circuits
		5	evaluate the enhancement in the performance of computer by incorporating new concepts and technological developments
Structured Programming in C	MCACT103	1	Define the basic terminologies of the C programming Language
		2	Explain the concept of various programming structures used in C.
		3	Apply programming concepts of array, structures, pointers, files and union for implementing programs.

		4	Analyse the logical and problem solving skills
		5	Create an application using C programming language.
Software Engineering and Object oriented modeling	MCACT104	1	Identify suitable life cycle models to be used.
		2	Analyze a problem and identify and define the computing requirements to the problem.
		3	Translate a requirement specification to a design using an appropriate software engineering methodology.
		4	Formulate appropriate testing strategy for the given software system.
		5	Analyze the basics of UML tools used for object oriented modeling
Database Technology and NoS	MCACT105	1	Define the terminology, features, models, schema and characteristics of a database systems.
		2	Explain the concept of Transaction, Query processing and new trends such as distributed database, replication, fragmentation and NoSQL.
		3	Retrieve any type of information from a data base by applying complex queries in SQL.
		4	Design conceptual models of a database using ER modelling for real life applications.
		5	Create a normalized database for a real life application.
Database Technology lab(MYSQL and MongoDB)	MCACP106	1	Describe and demonstrate data integrity: validity checking, uniqueness constraints, referential integrity, cascaded deletes and updates, triggers.
		2	Prepare SQL queries that use multiple tables.
		3	Write SQL queries that involve correlated and non-correlated sub queries, outer joins, inner joins, self joins.
		4	Create and manipulate NoSQL Database
Software Development Lab- I (C programming)	MCACP107	1	Select and model data using primitive and structured types.
		2	Construct programs that demonstrate effective use of C features including arrays, structures & Pointer

		3	Handle various sorting and searching techniques
		4	Create and manipulate Files using various file handling functions
		5	Design and implement an application for a given problem domain
Employability Skill Training-Phase 1	MCACT108 emp Skill Junias	1	Understand all aspects of communication and its effect on giving and receiving information.
		2	Describe his/her analytical and lateral thinking, constructive argument capabilities, clarity of thoughts and capability to hold a discussion with a group.
		3	Analyze the purpose of professional interviews.
		4	Evaluate the importance of self-preparation.
		5	Students are able to apply their interviewing skills in an environment similar to an actual interview.
Semester 2			
Optimization Techniques for Computer Applications	MCACT201	1	Get basic insights into Applications of Operations Research in Managerial Decision Making.
		2	Familiar with Scientific Tools and Models in OR for analysing the Business.
		3	Understand the basics of Decision Science.
Data structures and Algorithm Analysis	MCACT202	1	Have deep knowledge about the organization of data structures, Arrays, Linked Lists, Stacks, Queues, Trees and Graphs.
		2	Select the appropriate data structures for solving the given problem.
		3	Differentiate sorting and searching methods and their features.
		4	Analyse the performance of devised algorithms using different analysis methods.
		5	Know the various algorithm design strategies and their applications. Thus will be able to choose the more suitable method for the given scenario.
Computer Networking with TCP/IP	MCACT203	1	Define basic concepts of protocols and standards as well as various networking services

		2	Explain the fundamentals and services of various layers in TCP/IP Protocol Suit
		3	Apply the concepts of addressing for assigning IP addresses for implementing a network
		4	Analyze and Compare the structure, formats of messages, and services offered by different protocols in each layers.
		5	Develop a model of a small network using classfull / classless addressing.
Data Science & Big data Analysis	MCACT204	1	Students will be able to define the organization of data mining techniques and big data
		2	Select and explain the appropriate big data technique for solving the given problem.
		3	Illustrate different techniques and their features.
		4	Analyse and compare the performance of different algorithms
		5	Evaluate various algorithm and their applications. Thus will be able to choose more suitable method for given scenario.
Object oriented Lab(Java Lab)	MCACT205	1	Define the basic fundamentals of JAVA
		2	Apply Oops concepts in JAVA
		3	Explain the concept of multiple inheritance using Interface
		4	Design Graphical user Interface using Swing
		5	Develop GUI application with database
Object oriented Lab(Java Lab)	MCACP206	1	Define the basic fundamentals of PHP
		2	Students will be able to understand the programming concepts of PHP
		3	Students will be able to apply OOPS concepts in PHP
		4	Students will be able to develop GUI database application using PHP and establish database connection using MySQL
		5	Students will be able to explain the development and implementation of frameworks in applications
Data structures Lab using C	MCACP-207	1	Have deep knowledge about the organization of data structures, Arrays, Linked Lists, Stacks, Queues, Trees and Graphs.

		2	Select the appropriate data structures for solving the given problem.
		3	Differentiate sorting and searching methods and their features.
Semester 3			
Machine Learning Techniques	MCACT301	1	Understand a very broad collection of machine learning algorithms and problems
		2	Learn algorithmic topics of machine learning and mathematically deep enough to introduce the required theory
		3	Develop an appreciation for what is involved in learning from data.
		4	Understand how to evaluate models generated from data.
Cyber Forensics	MCACT302	1	Develop an appreciation for what is involved in learning models from data.
		2	Define basic concepts of protocols and standards as well as various networking services
		3	Explain the fundamentals and services of various layers in TCP/IP Protocol Suit
		4	Apply the concepts of addressing for assigning IP addresses for implementing a network
		5	Analyze and Compare the structure, formats of messages, and services offered by different protocols in each layers.
Artificial Intelligence	MCAET303	1	To Explore the importance and relevance of AI in various fields and to understand the basic theory of problem solving.
		2	To be familiar with searching strategies in AI
		3	Illustrate the Knowledge Representation and Knowledge Acquisition using Algorithm and Reasoning.
		4	Illustrate the Knowledge Representation and Knowledge Acquisition using Algorithm and Reasoning.
		5	To be Aware of Application of AI in different fields like NLP, Expert Systems and Robotics
Cloud computing	MCACT304	1	Learn the basics of cloud computing including its benefits, challenges and services. Explain the concepts of resource virtualization, resource pooling sharing and provisioning

		2	Discuss the scaling in cloud, capacity planning and load balancing. Explain file system and storage.
		3	Describe the multi-tenant software and data in cloud. Learn database technology. Describe the content delivery network, security reference model, security issues, privacy and compliance issues.
		4	Explain portability and interoperability issues and cloud management, a programming model case study. Enumerate popular cloud services.
		5	Understand the enterprise architecture and SOA, Enterprise software, Enterprise custom applications, workflow and business processes, enterprise analytics and search and enterprise cloud computing ecosystem.
Python Programming for Data Science	MCACT305	1	Familiarizing the basics of python.
		2	Problem Solving using the efficient features of of python.
		3	Application of the web frame work.
		4	Developing software projects comprising of static & dynamic web pages based on user requirement.
		5	Data Analytics and interpretation using datascience tools
Advance Operating System Lab using Linux	MCACP306	1	Students familiarize with linux operating system and its installation
		2	Students will have a thorough understanding of Shell programming and Linux Administration.
		3	Students will be able to setup and Manage a linux system .
Employability Skill Training- Phase 2	MCACT308	1	Evaluate self-assessment of strengths and weaknesses; identify what is lacking for a better personality and improve on it.
		2	Analyze Quantitative, verbal and logical reasoning and comprehension problems in IT recruitment drives and other competitive exams.
		3	Create and write an effective cover letter and resume.
Semester5			
User Interface Design	MCA501T	1	Students will be able to define the basic concepts of user interface design

		2	Students will be able to explain the principles and processes of user interface design
		3	Students will be able to illustrate the use of user interface design in real life scenarios.
		4	Students will be able to compare different interface designs.
		5	Able to evaluate the efficiency of various interfaces using what they learned through the user interface design process.
Knowledge Management & Business Intelligence	MCA 502T	1	Students will develop understanding of transformation of data into information and in turn into knowledge for better decision making.
		2	The students will be able to establish a data warehouse, usage of OLAP tools and knowledge management system in an organization.
		3	Students will be exposed to the cross-disciplinary approaches to creation, storage and transfer knowledge within and between organizations.
Enterprise Resource Planning	MCA503T	1	Students are getting the idea of The History of Information Security, Threats, Attacks and Secure Software Development
		2	Students getting the knowledge of, Security Technology Firewalls, VPNs, Intrusion detection, Access Control.
		3	Students are getting the knowledge of E-Commerce framework and Consumer oriented E- Commerce applications.
		4	Students are getting the knowledge of Electronic Data Interchange.
		5	Students will be able to understand working Internet security standards and encryption techniques.
Advanced Java Programming	MCA5041T	1	Define the concept of multithreading and Socket Programming
		2	Describe Swing components to design window interfaces
		3	Apply JDBC connectivity to access database through Java Programs
		4	Figure out various input/output Stream Classes
		5	Design dynamic web pages, using Servlets and JSP.

Elective - II	MCA 505E	1	Students are getting the idea of The History of Information Security, Threats, Attacks and Secure Software Development
		2	Students getting the knowledge of, Security Technology Firewalls, VPNs, Intrusion detection, Access Control.
		3	Students are getting the knowledge of E-Commerce framework and Consumer oriented E- Commerce applications.
		4	Students are getting the knowledge of Electronic Data Interchange.
		5	Students will be able to understand working Internet security standards and encryption techniques.
Advanced Java Programming Practicals	MCA506P	1	Define the basic fundamentals of Socket Programming and multi threading concepts
		2	Apply JDBC connectivity to access database through Java Programs
		3	Create dynamic web pages, using Servlets and JSP.
		4	Design Graphical user Interface using Java Swing
		5	Develop a GUI application with database
Python Programming - Practicals	MCA 507P	1	Students will be able to define the basic program elements of python programming language.
		2	Students will have the ability to the commonly used operations involving various data structures like lists, dictionaries, tuples and sets.
		3	Students will be able to apply the concepts learnt to develop solutions in Python.
		4	Students will be able to solve problems of varying natures using different program constructs.
		5	Students will be able to analyze problems encountered in everyday life, decide on the functionality required and create programs to solve it.

INTEGRATED MCA PROGRAMME

PROGRAMME EDUCATIONAL OBJECTIVES (PEO)

1. PEO1: To impart knowledge to students in foundation of mathematics, computer application, problem solving and decision-making technique for effective implementation in the area of software development.
2. PEO2: Student will be capable of communicating effectively and use recent technology, environments and platform in analyzing, designing, developing and maintaining complex application in computer domain that are technically sound, economically feasible and socially acceptable.
3. PEO3: Students will exhibit communication skills, team work, ethical attitude, professionalism and adapt to current trends by engaging in lifelong learning.

PROGRAMME OUTCOME (PO)

At the end of the Programme, a student will be able to achieve the following programme outcomes:

1. Computational Knowledge:

Apply knowledge of computing fundamentals, computing specialization, mathematics, and domain knowledge appropriate for the computing specialization to the abstraction and conceptualization of computing models from defined problems and requirements.

2. Problem Analysis:

Identify, formulate, research literature, and solve complex computing problems reaching substantiated conclusions using fundamental principles of mathematics, computing sciences, and relevant domain disciplines.

3. Design /Development of Solutions:

Design and evaluate solutions for complex computing problems, and design and evaluate systems, components, or processes that meet specified needs with appropriate consideration for public health and safety, cultural, societal, and environmental considerations.

4. Conduct Investigations of Complex Computing Problems:

Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions.

5. Modern Tool Usage:

Create, select, adapt and apply appropriate techniques, resources, and modern computing tools to complex computing activities, with an understanding of the limitations.

6. Professional Ethics:

Understand and commit to professional ethics and cyber regulations, responsibilities, and norms of professional computing practice.

7. Life-long Learning:

Recognize the need, and have the ability, to engage in independent learning for continual development as a computing professional.

8. Project management and finance:

Demonstrate knowledge and understanding of the computing and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.

9. Communication Efficacy:

Communicate effectively with the computing community, and with society at large, about complex computing activities by being able to comprehend and write effective reports, design documentation, make effective presentations, and give and understand clear instructions.

10. Societal and Environmental Concern:

Understand and assess societal, environmental, health, safety, legal, and cultural issues within local and global contexts, and the consequential responsibilities relevant to professional computing practice.

11. Individual and Team Work:

Function effectively as an individual and as a member or leader in diverse teams and in multidisciplinary environments.

12. Innovation and Entrepreneurship

Identify a timely opportunity and using innovation to pursue that opportunity to create value and wealth for the betterment of the individual and society at large.

PROGRAM SPECIFIC OBJECTIVES (PSO)

PSO1: Recent Technology

Students will have sound theoretical knowledge and skill for analysing real life problems, design complex computing systems appropriate to its solutions with the recent technology.

PSO2: Employability Skill

After Completing this program students will have ability to pursue their career professionally with ethics as an individual or as a member of a team in software industry, corporate sector, Government organization, academia, research, consultancy firm, entrepreneurship and will possess knowledge and skill for problem solving and decision making.

PSO3: Management /Leadership skill and Analytical Reasoning

After this program students will possess management and leadership skill, analytical reasoning for solving time critical problems with best professional ethical practice, environmental and social concern.

Master of computer application- Course outcomes

Course Name	Course Code	CO Number	COs
Semester 1			
English	IMCA1CO1	1	Define and identify various methods to develop communication skills.
		2	Discuss and describe the strategies to improve listening, speaking, reading, and writing skills.
		3	Explain the skills required for creating a formal speech and participating in group discussion.
		4	Classify the sounds of English and their symbols.
		5	Develop the ability to converse on any topic.
Digital Electronics and microprocessors	IMCA1CO2	1	Define the fundamental concepts of digital electronics and microprocessors.
		2	Describe the basic concepts of electronics and 8086 microprocessor including architecture.
		3	Apply Boolean laws and theorems in simplifying Boolean functions.
		4	Solve problems like conversion between various number systems, binary arithmetic, simplifying digital circuits, Boolean expressions, combinational and sequential circuits
		5	Design logic circuits with minimum cost
Statistics	IMCA1CO3	1	Students will be able to understand and reproduce the core concepts of probability.
		2	Students will be able to understand the concepts related to basic ideas in probability, sampling and testing.
		3	Students will be able to apply mathematical formulae to find the values in probability.
		4	Students will have the ability to create a statistical model from the real life problems.
		5	Students will be able to evaluate the probability of an event..
Introduction to Computers & PC Hardware	IMCA1CO4	1	Identify the components of standard desktop personal computers.
		2	Identify fundamental components and functions of personal computer operating systems.
		3	Install and configure system components.
		4	Maintain and troubleshoot peripheral components.
		5	Troubleshoot system components.

Introduction to Computers & PC Hardware	IMCA1C05	1	List the different datatypes, operators, statements, pre-defined functions in C
		2	Explain the usage of different program elements in C.
		3	Apply the C language concepts to solve different problems using algorithms, flowcharts etc
		4	Discuss the different programming methodologies and evaluate their pros and cons.
		5	Study the different memory allocation mechanisms and elaborate their usage by creating efficient solutions to problems.
PC hardware Practicals	IMCA1P06	1	Identify the components of standard desktop personal computers.
		2	Identify fundamental components and functions of personal computer operating systems.
		3	Install and configure system components.
		4	Maintain and troubleshoot peripheral components.
		5	Troubleshoot system components.
C Practicals	IMCA1P07	1	Show the representation of data structures such as arrays, structures, unions.
		2	Explain the different methods used to store data using files.
		3	Apply modular programming concepts to develop reusable program elements.
		4	Solve problems of varying natures using different program constructs.
		5	Analyze problems encountered in everyday life, decide on the functionality required to solve it and create efficient solutions to problems.
Semester 2			
Fundamentals of Accounting	IMCA2C01	1	Awareness about the need and importance of accounting.
		2	Understand the different types of accounting systems
		3	Apply the rules of accounting system to prepare the books of accounts.
		4	Construct Final Accounts from the business transaction.
		5	Evaluate the business position of the organizations from their financial statements.
Probability and Statistics	IMCA2C02	1	Students will be able to understand and reproduce the core concepts of probability.
		2	Students will be able to understand the concepts related to basic ideas in probability, sampling and testing.
		3	Students will be able to apply mathematical formulae to find the values in probability.

		4	Students will have the ability to create a statistical model from the real life problems.
		5	Students will be able to evaluate the probability of an event..
Computer Organization And Architecture	IMCA2CO3	1	Students will be able to define the fundamental concepts of computer organization
		2	Students will be able to understand the theory and architecture of computer and its fundamental parts including parallel processing and pipelining
		3	Students will be able to determine the coordination and the role of different components in the computer for a program execution
		4	Students will be able to analyze and compare the architectural differences in different processors.
		5	Students will be able to evaluate the enhancement in the performance of computer by incorporating new concepts and technological developments
Data Structures- C	IMCA2CO4	1	Students will be able to list the different types of data structures in C.
		2	Students will be able to describe and explain the different data structures and their operations.
		3	Students will be able to apply the data structures concepts learned to solve various real-world problems.
		4	Students will have the ability to design algorithms for manipulating various data structures,
		5	Students will be able to analyze the different sorting and searching techniques.
Object Oriented Programming with C++	IMCA2CO5	1	Students will be able to list and define the basic concepts of object-oriented programming
		2	Students will be able to explain the usage of different program elements in C++.
		3	Students will be able to apply the concepts learned and generate fault tolerant code.
		4	Students will be able to write programs by applying the various oops concepts.
		5	Students will be able to analyze real world problems and create extensible, reusable code.
Data Structures -C Practicals	IMCA2PO6	1	Students will be able to represent data in various formats including an array, linked list, trees etc.
		2	Students will be able to describe various data structures along with how to manipulate them.

		3	Students will be able to solve various real-world problems by applying the data structure concepts.
		4	Students will be able to write programs to show the working of various data structures
		5	Students will be able to analyze and simulate various sorting and searching techniques
C ++ Practicals	IMCA2PO7	1	Students will be able to define the basic program elements of c++ programming language.
		2	Students will be able to explain the different concepts of oops incorporated in a program using algorithms.
		3	Students will be able to apply object-oriented programming concepts to develop reusable program elements.
		4	Students will be able to solve problems of varying natures using different program constructs.
		5	Students will be able to analyze problems encountered in everyday life, decide on the functionality required and create programs to solve it.
Semester3			
Mathematical Foundation of Computer Science	IMCA3CO1	1	Define the important terms used in the various topics included in the course.
		2	Compute the compositions, properties, representations and inverses of Relations and Functions.
		3	Apply the operations of Sets, Rules of Inference and Graph Theory.
		4	Differentiate between the different types of Sets, Relations, Functions, Logical structures and Graphs.
		5	Evaluate problems using the concepts of Sets, Logic and Graphs.
Management Information Systems	IMCA3CO2	1	Students will be able to know about the guiding principles and theories of Management
		2	Students will be able to understand the core functions of Management.
		3	Students will be able to apply the stages of recruitment in different organization.
		4	Students will be able to customize & suggest appropriate performance appraisal system for the organisation.
		5	Students will be able to evaluate the pros and cons of applying various marketing strategies

DBMS AND NO SQL	IMCA3CO3	1	Define the terminology, features, models, schema and characteristics of a database systems.
		2	Explain the concept of Transaction, Query processing and new trends such as distributed database, replication, fragmentation and NoSQL.
		3	Retrieve any type of information from a data base by applying complex queries in SQL.
		4	Design conceptual models of a database using ER modelling for real life applications.
		5	Create a normalized database for a real life application.
Principles of Management	IMCA3CO4	1	Students will be able to know about the guiding principles and theories of Management
		2	Students will be able to understand the core functions of Management.
		3	Students will be able to apply the stages of recruitment in different organization.
		4	Students will be able to customize & suggest appropriate performance appraisal system for the organisation.
		5	Students will be able to evaluate the pros and cons of applying various marketing strategies
Visual Programming(C#.NET)	IMCA3CO5	1	Students will be able to list all the tools and features of visual studio framework.
		2	Students will be competent to use the visual studio framework and ms sql database.
		3	Students will be able to justify the usage of different tools to create windows-based applications.
		4	Students will be able to design and develop applications with database connectivity by the use of C#.net language.
		5	Students will be able to test and maintain the applications created in visual studio framework with MS SQL as data base.
DBMS Practical (ORACLE & Mongodb)	IMCA3PO6	1	Describe and demonstrate data integrity: validity checking, uniqueness constraints, referential integrity, cascaded deletes and updates, triggers.
		2	Prepare SQL queries that use multiple tables.
		3	Write SQL queries that involve correlated and non-correlated sub queries, outer joins, inner joins, self joins.
		4	Create PLSQL block to manipulate the data.
Visual Programming Practicals	IMCA3PO7	1	Students will be familiar with all the tools and features of visual studio framework.
		2	Students will be competent to use the visual studio framework and ms sql database.
		3	Students will be able to justify the usage of different tools to create windows-based applications and also in-depth knowledge about MS SQL Database.

		4	Students will be able to design and develop applications with database connectivity by the use of C#.net language.
		5	Students will be able to test and maintain the applications created in visual studio framework with MS SQL as data base.
Semester 4			
Technical Communication	IMCA4CO1	1	Understand the dynamics of communication in the technical world.
		2	Apply grammatically accurate sentences.
		3	Develop corporate skills needed for employment in the industry.
		4	Explain events, processes, and situations
		5	Create a job application along with a CV.
Java	IMCA4CO2	1	Define the fundamental concepts of digital electronics and microprocessors.
		2	Differentiate between C , C++ , JAVA
		3	Apply Oops concepts in JAVA
		4	Explain the concept of multiple inheritance using interfaces
		5	Create GUI application using JAVA SWING and establish database connection using JDBC
Elective I	IMCA4E01	1	Students are getting theover all idea of client-server concept
		2	Students getting the knowledge of client side hardware software and client side requirements
		3	Students are getting the knowledge of server side hardware , server environment and server operating system.
		4	Students are getting the knowledge of server requirements
		5	Students will be able to get the idea about server data management and access tools
System Software	IMCA4CO3	1	Recall the basic design of various system software.
		2	Discuss and explain the working of one pass, two pass and multi pass Assembler
		3	Illustrate the working of system software such as, linkers, loaders, Macro pre processor
		4	Demonstrate the working of Editing and debugging Tools
		5	Examine the concept of Finite Automata and Regular Expression
E-Commerce	IMCA4CO4	1	Understand the concept of e-commerce
		2	Fair idea on the infrastructure required from e-commerce
		3	Evaluating servers and tools for maintaining e-commerce sites

		4	understanding security, copy right issues, intellectual property and payment systems
		5	Understaning intelligent agents,online advertisement etc
Java Practicals	IMCA4C05	1	Define the basic fundamentals of JAVA
		2	Apply Oops concepts in JAVA
		3	Explain the concept of multiple inheritance using Interface
		4	Design Graphical user Interface using Swing
		5	Develop GUI application with database
RDBMS Practicals	IMCA4P06	1	Design and implement a database schema for a given problem-domain
		2	Declare and enforce integrity constraints on a database using a state-of-the-art RDBMS
		3	Create a normalized database and apply triggers procedure functions and cursors and exception handling on database with.
		4	Design PL/SQL block
		5	Implement ODBC techniques.
Semester 5			
Operations Research	IMCA5C01	1	Students will be able to define linear and non linear programs
		2	Students will be able to explain where operations research applies and about simulation
		3	Students will be able apply knowledge on various linear and non linear programming
		4	Students will be able to estimate the transportation cost of products from source to destination and evaluate the travelling cost.
		5	Students will be able to Construct the network diagram
Compiler Design	IMCA5C02	1	Draw Finite Automata from Regular expression
		2	Describe the basic structure of the Compiler
		3	Apply the Code optimization techniques
		4	Separate the lexical, syntactic and semantic analysis into meaningful phases for a compiler to undertake language translation
		5	Create parse tree representation and implement parsing techniques
Distributed Computing	IMCA5C03	1	Describe features of distributed computing.
		2	Explain about distributed computing.
		3	Illustrate about distributed computing.
		4	Distinguish about distributed computing features.
		5	Outline about distributed computing.

Computer Networks	IMCA5C04	1	understand the general principles of computer Networks
		2	Understand how computer networks are organized with the concept of layered approach.
		3	Understand how packets in the internet are delivered
Software Engineering	IMCA5C05	1	Identify suitable life cycle models to be used.
		2	Understanding of implementation issues such as modularity and coding standards
		3	Analyze a problem and identify and define the computing requirements to the problem.
		4	Formulate appropriate testing strategy for the given software system
		5	To develop, maintain and evaluate large-scale software systems.
Compiler Design Practicals	IMCA5C06	1	Draw parse tree representations for grammars.
		2	Describe various lexical analyzers and parsers.
		3	Simulate LEX and YACC tools
		4	Analyze various parsing techniques
		5	Generate intermediate code generations
Cloud Computing Practicals	IMCA5C07	1	Students will be able to know about the guiding principles and theories of Management
		2	Students will be able to understand the core functions of Management.
		3	Students will be able to apply the stages of recruitment in different organization.
		4	Students will be able to customize & suggest appropriate performance appraisal system for the organisation.
		5	Students will be able to evaluate the pros and cons of applying various marketing strategies
Semester 6			
Research Methodology	IMCA6C01	1	Define terminologies related to research and publication, intellectual property rights, basic statistical measures and various tests of hypotheses.
		2	Explain the research process as well as ethical principles and challenges with respect to IPR in research and publishing.
		3	Compare/Differentiate between different types of research, intellectual property rights, basic statistical measures as well as various tests of hypotheses.
		4	Apply different statistical tests of hypothesis as well as statistical measures.
		5	Create a document using LATEX.
IT Infrastructure Management	IMCA6C02	1	Define the knowledge of IT Infrastructure and management
		2	Explain various storage levels in IT.

		3	Illustrate Service Delivery and Service Support Process in IT infrastructure management.
		4	Compare the various security techniques in information technology
		5	Create new communication mechanism based on emerging trends in information technology.
Elective II	IMCA6CO3	1	Students are getting the idea of Android Programming, Fundamentals of Android Programming and UI components
		2	Students getting the knowledge of how the Android Programming application structure.
		3	Students are getting the knowledge of Emulator-Android Virtual Device in android programming.
		4	Students are getting the knowledge of Access and work with databases under the Android operating system and menu options.
		5	Students will be able to get the idea about Adapters and Widgets and threads in android programming.
Semester 7			
Principles of Management & Accounting	IMCA7CO1	1	Students will be able to know about the guiding principles and theories of Management
		2	Students will be able to understand the core functions of Management.
		3	Students will be able to apply the stages of recruitment in different organization.
		4	Students will be able to customize & suggest appropriate performance appraisal system for the organisation.
		5	Students will be able to evaluate the pros and cons of applying various marketing strategies
Analysis & Design of Algorithms	IMCA7CO2	1	Analyze a given algorithm and express its time and space complexities in asymptotic notations.
		2	Ability to understand how the choice of data structures and the algorithm design methods impact the performance of programs.
		3	Ability to choose appropriate algorithm design techniques for solving problems. Solve recurrence equations using Iteration Method, Recurrence Tree Method and Master's Theorem. Solve Optimization problems using Greedy strategy.
		4	Design algorithms using Divide and Conquer Strategy and efficient algorithms using Back Tracking and Branch Bound Techniques for solving problems
		5	Compare Dynamic Programming and Divide and Conquer Strategies and Classify computational problems into P, NP, NP-Hard and NP-Complete.
	IMCA7CO3	1	Students will be able to recall various object oriented concepts in Java.

Object Oriented Programming through Java		2	Students will be able to compare programming concepts and identify its applicability in problem solving.
		3	Students will be able to apply their knowledge on various object oriented programming concepts to solve real world problems.
		4	Students will be able to judge and decide on the best method to solve a problem
		5	Students will be able to develop application as well as applet programs using Java.
Software Engineering & Project Management	IMCA7CO4	1	Identify suitable software process models for the given computing problem
		2	Translate a requirement specification to a design using an appropriate software engineering methodology.
		3	Apply Project Management and quality assurance principles in software development
		4	Summarize different software cost estimation and project scheduling techniques.
		5	Formulate appropriate testing strategy for the given software system.
OOAD	IMCA7CO5	1	Explain OOAD concepts and various UML diagrams
		2	Select an appropriate design pattern
		3	Illustrate about domain models and conceptual classes
		4	Compare and contrast various testing techniques
		5	Construct projects using UML diagrams
PHP Programming Practicals	IMCA7CO6	1	Students will be able to state the features of web programming.
		2	Students will be able to explain the concepts of web programming.
		3	Students will be able apply knowledge relating to the concepts of web programming.
		4	Students will be able to distinguish the concepts of web programming.
		5	Students will be able to design applications based on the concepts of web programming.
OOPS through Java Practicals	IMCA7CO7	1	Student will understand oops concept and basics of Java programming
		2	Students will be able to apply error handling techniques using exception handling and multithreading.
		3	Students will be able to describe Java data types, Control Structures, functions, Object oriented programming concepts

		4	Students will be able to analyze various requirements need for developing applications and identify solutions to computational problems
		5	Students will be able to develop GUI using Applet and AWT tool kit.
Semester 8			
System Software And Automata	IMCA8CO1	1	Recall the basic design of various system software.
		2	Discuss and explain the working of one pass, two pass and multi pass Assembler
		3	Illustrate the working of system software such as, linkers, loaders, Macro pre processor
		4	Demonstrate the working of Editing and debugging Tools
		5	Examine the concept of Finite Automata and Regular Expression
Data Mining & Warehousing	IMCA8CO2	1	Characterize the kinds of patterns that can be discovered by association rule mining, classification and clustering.
		2	Understand and implement classical models and algorithms in data warehouses and data mining.
		3	Master data mining techniques in various applications like social, scientific and environmental context.
		4	Develop skill in selecting the appropriate data mining algorithm for solving practical problems.
		5	
TCP/IP Protocols	IMCA8CO3	1	Define basic concepts of protocols and standards as well as various networking services
		2	Explain the fundamentals and services of various layers in TCP/IP Protocol Suit
		3	Apply the concepts of addressing for assigning IP addresses for implementing a network
		4	Analyze and Compare the structure, formats of messages, and services offered by different protocols in each layers.
		5	Develop a model of a small network using classfull / classless addressing.
Linux OS and Shell programming	IMCA8CO4	1	Students familiarize with linux operating system and its installation
		2	Students will have a thorough understanding of Shell programming and Linux Administration.
		3	Students will be able to setup and Manage a linux system .
Elective III	IMCA8CO5	1	Students will be able to outline the tools and technologies used to store and analyze Big Data.
		2	Students will be able to describe the advantages of Big data, schema less models for data manipulation and distributed file management systems like Hadoop and related tools.

		3	Students will develop the ability to apply the concepts of Big data management and determine the appropriate storage models, analysis tools required for complex data analysis.
		4	Students will be able to compare the different technologies for Big data management.
		5	Students will be able to develop a map-reduce application and analyze unstructured data.
Linux OS & Shell programming Practicals	IMCA8CO6	1	Students familiarize with linux operating system and its installation
		2	Students will have a thorough understanding of Shell programming and Linux Administration.
		3	Students will be able to setup and Manage a linux system .
Semester 9			
User Interface Design	IMCA9CO1	1	Students will be able to define the basic concepts of user interface design
		2	Students will be able to explain the principles and processes of user interface design
		3	Students will be able to illustrate the use of user interface design in real life scenarios.
		4	Students will be able to compare different interface designs.
		5	Evaluate the efficiency of various interfaces using what they learned through the course.
Knowledge Management & Applications	IMCA9CO2	1	Students will develop understanding of transformation of data into information and in turn into knowledge for better decision making.
		2	The students will be able to establish a data warehouse, usage of OLAP tools and knowledge management system in an organization.
		3	Students will be exposed to the cross-disciplinary approaches to creation, storage and transfer knowledge within and between organizations.
		4	
		5	
Enterprise Resource Planning	IMCA9CO3	1	To understand the fundamental concepts of ERP systems, their architecture.
		2	Will able to work of different modules in ERP. S
		3	To develop and design the modules used in ERP systems.
		4	Customize the existing modules of ERP systems.
Mobile Application Development – Adv Java	IMCA9CO4	1	Define the concept of multithreading and Socket Programming
		2	Describe Swing components to design window interfaces
		3	Apply JDBC connectivity to access database through Java Programs

		4	Figure out various input/output Stream Classes
		5	Design dynamic web pages, using Servlets and JSP.
Elective IV	IMCA9C05	1	Students are getting the idea of The History of Information Security, Threats, Attacks and Secure Software Development
		2	Students getting the knowledge of, Security Technology Firewalls, VPNs, Intrusion detection, Access Control.
		3	Students are getting the knowledge of E-Commerce framework and Consumer oriented E- Commerce applications.
		4	Students are getting the knowledge of Electronic Data Interchange.
		5	Students will be able to understand working Internet security standards and encryption techniques.
Mobile Application Development – Practicals	IMCA9C06	1	Define the basic fundamentals of Socket Programming and multi threading concepts
		2	Apply JDBC connectivity to access database through Java Programs
		3	Create dynamic web pages, using Servlets and JSP.
		4	Design Graphical user Interface using Java Swing
		5	Develop a GUI application with database
Python Programming – Practicals	IMCA9C07	1	Students will be able to define the basic program elements of python programming language.
		2	Students will have the ability to the commonly used operations involving various data structures like lists, dictionaries, tuples and sets.
		3	Students will be able to apply the concepts learnt to develop solutions in Python.
		4	Students will be able to solve problems of varying natures using different program constructs.
		5	Students will be able to analyze problems encountered in everyday life, decide on the functionality required and create programs to solve it.

M. Sc. Molecular Biology and Genetic engineering-

Programme Specific Outcomes

PSO-1. Practical work in the laboratory along with the theory classes in bioinformatics and molecular biology fields enables the students to be specialized in the molecular biology and genetic engineering

PSO-2. Project work and the preparation of Dissertation helps them to creating research aptitude among the post graduate students

Programme Outcomes

PO1. Identify, formulate and analyze complex genetic problems and reaching substantiated conclusions using the principles of genetics, natural sciences, and biotechnology.

PO2. Apply the scientific knowledge to the solution of complex problems in lifesciences.

PO3. Design solutions for complex genetic problems with appropriate consideration for the public health and safety, and the cultural, societal, and environmental considerations.

PO4. Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions.

PO5. Communicate effectively on complex biolechnological activities with the scientific community and with society

PO6. Recognize the need for, and have the preparation and ability to engage in independent and life

M. Sc. Molecular Biology and Genetic engineering- Course outcomes

Course Name	Course Code	COs	Course Outcome
Semester 1			
Fundamental Genetics	BS030101	1	Postulate the Mendel basics on the inheritance of characters and additional insights that modern genetics has brought to this field
		2	Apply the principles of quantitative traits in polygenic inheritance
		3	Analyze the concept of extra chromosomal inheritance.
Molecular organization of Chromosome	BS030102	1	Describe basic principles and techniques in this discipline. T
		2	Evaluate and apply information from scholarly literature and other sources to expand personal understanding and knowledge on molecular organization of chromosome.

		3	Design an experiment with step-by-step instructions to address a research problem
Molecular Structure of Nucleic acids, gene regulation and expression	BS030103	1	Identify and understand the mechanisms of molecular biology concepts.
		2	Design molecular strategies for identifying the gene mutations.
practical 1	BS030104	1	The vision and scope of the biomolecules – proteins, amino acids, vitamins, hormones and fats at molecular level have the functional mode of these molecules prior to the entry of molecular interpretation.
		2	Despite providing the basic information of about the molecules, a clear understanding on the functional diversity of the molecules in this metabolism will be an outcome for extending the student's knowledge at application level
		3	The importance of biomolecules will be convinced by doing the experiments on the isolation, purification and quantification of these molecules so that the students will get a clear concept about its biological relevance at application level and they get enough practical knowledge for applying it at industrial scale.
		4	The interpretation of the experimental data will be done by analysis it statistically using illustrations and graphs and figures.
Semester 2			
Biomolecules: Synthesis, Structure & Metabolism	BS030201	1	Understand the biochemical systems of organisms and able to develop adequate mechanism for modification of gene in molecular level.
Molecular Analysis of biomolecules	BS030202	1	To understand use and applications of various types of microscope
		2	To know, how hplc and gc works.
		3	Capable to do sds page and other electrophoretic techniques.
Oncology Immunopathogenesis and Diagnostics	BS030203	1	Understand the cell are responsible for cancer
		2	How to diagnosis and how to develop the immunity to resist them by the application of modern tools of molecular biology.
practical 2	BS030204	1	Isolation of good quality intact rna is pre-requisite for gene expression studies. Hence hands on training in rna isolation from different source is the major outcome of the course

		2	Molecular biology & genetic engineering very closely associate with handling microorganisms to study recombinant dna technology. Hence a clear understanding on the tools and techniques in handling and culturing microorganism will extend the student's knowledge at application level
		3	The study of analytical experiments like chromatographic techniques, purification of proteins molecules will enable the student to get a clear concept about its biological relevance at application level and they get enough practical knowledge for applying it at industrial scale.
Semester 3			
Transgenics- Animals and plants	BS030302	1	Identify and understand the techniques of genetic engineering
		2	Develop strategy for genetic engineering in plants and animals
Genomics & Proteomics	BS030303	1	Determine mutations in various genes
		2	Develop strategy for determining new drugs
Genetic Engineering, Bioethics & IPR	BS030301	1	Identify and understand the techniques of genetic engineering
		2	File patent applications in biotechnology
practical 3	BS030304	1	Define the necessity of learning the practical skills in genomics by providing students the theoretical concept of the biomolecules and at what extend they can be utilized in application level
		2	Interpret the experiments by highlighting its possible ways of understanding their skill without further complication
		3	Incorporated at industrial scale for the well being for the society
		4	Analysis of the data for interpreting the results through illustration and figures for convincing the public
Concepts and Methods of Research	BS860301	1	Identify and understand various research designing strategies and statistical calculations
		2	Write a research article
Semester 4			
Molecular Markers & Genome Analysis	BS860402	1	Apply current molecular tools to complement conventional breeding methodologies for efficient tracking, screening and selection of desirable genetic backgrounds how to diagnose diseases
Biotechnology Entrepreneurship	BS860403	1	To provide strategic support to students to create and integrate scientific, technical & business related frameworks that would accelerate and translate discoveries and carry out validation and transfer of product technologies to enterprises.

		2	Facilitate and catalyze the journey of biotech ideas of bio-entrepreneurs towards commercialization
		3	Enable and empower bio-entrepreneurs through business and technology

Bachelor of Commerce (Bcom)- Program outcomes

- PO1. Demonstrate Ability to Interpret and Analyze Financial Statements.
- PO2. Understanding the Rules and Regulation Laid Down by Accounting Body
- PO3. Demonstrate Ability to Understand Compliance as per Various Enactment
- PO4. Acquiring Conceptual Clarity of Various Functions and Ability to Analyze Various Functional Issues
- PO5. Demonstrating Ability to Evolve Strategies for Business
- PO6. Demonstrate Effectively Oral and Written Communication
- PO7. Demonstrate Ability to work in Groups. Exhibit skills like Empathy, EQ, Managerial and Inter-Personnel Skills
- PO8. Demonstrate understanding of social cues and contexts in social interaction
- PO9. Develop Ethical Practices and Imbibe Values for Better Corporate Governance. Understand Ethical Challenges and Choices in a Business Setting
- PO10. Demonstrate Understanding of Sustainability Related Concerns in Varied Areas
- PO11. Understand the Ecosystem of Start up in the Country
- PO12. Demonstrate the Ability to Create Business Plans

Bachelor of Commerce- Course outcomes			
Course Name	Course Code	COs	Course Outcome
Semester 1			
DIMENSIONS AND METHODOLOGY OF BUSINESS STUDIES	CO1CRT01	CO1	Explain the meaning and functions of business and its importance in this present scenario.
		CO2	Evaluate how the government policies have transformed business in India .
		CO3	Identify technology integration in business and also help them to apply in real life.
		CO4	Justify the importance of doing business ethically.
		CO5	Acquire information about the major rules and regulations applicable to a business.
FINANCIAL ACCOUNTING I	CO1CRT02	CO1	Prepare financial statements using accounting standards.
		CO2	Pertain the accounting procedures in the preparation of financial statements from incomplete records.
		CO3	Make use of the accounting procedures of royalty.

		CO4	Apply the accounting procedures on consignment of goods.
CORPORATE REGULATIONS AND ADMINISTRATION	CO1CRT03	CO1	Identify the characteristics of a company according to Companies Act, 2013.
		CO2	Explain the procedure for the promotion and formation of a company.
		CO3	Demonstrate the understanding of the rules related to raising of share capital and the contents of the prospectus.
		CO4	Describe the rules and provisions applicable in the administration of a company.
BANKING AND INSURANCE	CO1CMT01	CO1	To familiarize the students with the basic concepts and practice of banking and the principles of Insurance
		CO2	To provide the students an understanding about recent trends and innovations in the banking sector.
		CO4	Gain knowledge on various kinds of life insurance plans
		CO3	To provide basic awareness to students about the concept of risk and various types of insurance.
		CO5	Familiarize the types of the general insurance in India SE
Semester 2			
Issues that matter	EN2CCTO3	CO1	Exercise critical thinking and reasoning skills to discriminate and form informed opinions on issues that are relevant.
		CO2	Analyze theoretical learning to current developments in the world and relate to their everyday experiences.
		CO3	Enumerate ideas with confidence in group discussions.
		CO4	Compose imaginatively, impact fully, clearly and accurately based on their reading of the texts.
FINANCIAL ACCOUNTING II	CO2CRT04	CO1	To gain knowledge on preparation of accounts in Hire purchase and Instalment system.
		CO2	To acquire the skill to prepare different types of branch accounts.
		CO3	To transform the accounting knowledge in preparing departmental accounting.
		CO4	To familiar with the procedure involved in the dissolution of partnership firms.

		CO5	To familiarize students with the application of important accounting standards.
BUSINESS REGULATORY FRAMEWORK	CO2CRT05	CO1	To understand the rules governing Indian Contract Act
		CO2	To familiarize the rights and discharges of duties by parties in Indemnity, Guaranty, Bailment and Pledge
		CO3	To acquire knowledge of rules governs setting up of agency and termination of agency
		CO4	To understand the legal provisions of Sale of Goods Act.
		CO5	To know the legal provisions of the laws relating to business.
BUSINESS MANAGEMENT	CO2CRT06	CO2	To understand the corporate strategic planning techniques
		CO3	To acquire the knowledge on organization structure
		CO4	To familiarize with the different types of leadership
		CO5	To acquaint students with various the techniques of controlling and co-ordination management techniques like Quality Circle, TQM, BPR and Six Sigma
PRINCIPLES OF BUSINESS DECISIONS	CO2CMT02	CO2	To acquaint students with concept of demand, demand theory demands forecasting.
		CO3	To imparting idea about production function and analysis.
		CO4	To enable the students to understand Cost analysis.
		CO5	To make the students familiar with the pricing in different markets.
		Semester 3	
ENGLISH		CO1	The subtle negotiations of Indigenous and Diasporic identities with -in literature.
		CO2	The Fissures,the tensions and the interstices present in South Asian regional identities.
		CO3	The emergence of Life writing and alternate/alternative/marginal identities.

CORPORATE ACCOUNTS I	CO3CRT07	CO1	To make the students familiarise with the rules relating to issues of shares and debentures.
		CO2	To make the students familiarise with the rules relating to underwriting of shares .
		CO3	To familiar with computation of the financial results of companies.
		CO4	To familiar with preparation of Investments account .
		CO5	To familiar with computation of Insurance claims.
QUANTITATIVE TECHNIQUES FOR BUSINESS-I	CO3CRT08	CO1	To explain the features and methods of statistics
		CO2	To apply the appropriate sampling survey method and collect data
		CO3	To calculate an appropriate measure of central tendency
		CO4	To calculate an appropriate measure of dispersion
		CO5	To interpolate and extrapolate a value from a series and use it for forecasting
FINANCIAL MARKETS AND OPERATIONS	CO3CRT09	CO1	To introduce the operations of Indian financial system to the students
		CO2	To create awareness regarding the operations of primary market in India
		CO3	To understand the role of secondary market in the financial market operations
		CO4	To gain knowledge about the mutual funds, its operations, advantages and disadvantages
		CO5	To acquire knowledge about the various derivative instruments deal in the Indian financial market
MARKETING MANAGEMENT	CO3CRT10	CO1	To understand the marketing concepts and marketing environment.
		CO2	To acquire knowledge on product planning and product life cycle.
		CO3	To gain knowledge on choice of distribution channels and pricing strategies.
		CO4	To understand the various methods of promotion.
		CO5	CO5- To understand the peculiarities of marketing, marketing of agricultural products and functions of commodity market.
GOODS AND SERVICE TAX	CO3OCT01	CO1	To provide knowledge about goods service tax
		CO2	To create employability to the students in the commercial tax practices

		CO3	To understand the procedure for registration, payment and refund of GST
		CO4	To know tax related with movement of goods
		CO5	To understand the appeals, offences and penalties with respect to GST
INFORMATION TECHNOLOGY FOR BUSINESS	CO3OCT02	CO1	Define informatics and other terms related to information technology
		CO2	List various types of Hardwares and softwares with examples.
		CO3	Design Webpages for organizations
		CO4	Analyse the role of information technology in society.
Semester 4			
CORPORATE ACCOUNTS-II	CO4CRT11	CO1	To compute the final accounts for a corporate group like banking companies
		CO2	To compute the final accounts for insurance companies
		CO3	To give a detailed idea about internal reorganization of companies
		CO4	To apply the knowledge gained in preparation of final accounts of amalgamated companies
		CO5	To study the procedure followed for the liquidation of companies
QUANTITATIVE TECHNIQUES FOR BUSINESS	CO4CRT12	CO1	To provide exposure on calculation of measures of correlation
		CO2	To provide 1 exposure on calculation of Regression
		CO3	To acquaint students with the concept of index number
		CO4	To introduce the students about the concept of provability
		CO5	To acquire knowledge about time series analysis
ENTREPRENEURSHIP DEVELOPMENT AND PROJECT MANAGEMENT	CO4CRT13	CO1	To understand the concept, functions and growth of entrepreneurship
		CO2	To familiarise with project identification and feasibility analysis
		CO3	To learn to design and appraise the project and factors influencing the plant location.
		CO4	To acquire the knowledge on formalities and documentation for registration
		CO5	CO5- To understand the government policies for the growth of SS
FINANCIAL SERVICES	CO4OCT01	CO1	To create basic idea about financial services and merchant banking
		CO2	To facilitate the knowledge about venture capital and securitization

		CO3	To understand the concept of leasing and factoring
		CO4	To familiarity with the credit rating
		CO5	To aware about the concept of mergers and acquisitions
INFORMATION TECHNOLOGY FOR OFFICE	CO3OCP01	CO1	To enable the students to master in Ms Word 2013
		CO2	To enable the students to master in adobe page maker
		CO3	To enable the students to master in Ms Excel 2013
		CO4	To enable the students to master in advanced Ms Excel 2013
		CO5	To enable the students to master in Ms Powerpoint 2013
Semester 5			
COST ACCOUNTING-I	CO5CRT14	CO1	To understand the concept of costing and related terms.
		CO2	To familiarity with the estimation and controlling of material cost
		CO3	To understand the estimation and controlling of labour cost
		CO4	To familiarity with the estimation of overhead cost
		CO5	To able to prepare cost sheet
ENVIRONMENT MANAGEMENT AND HUMAN RIGHTS	CO5CRT15	CO1	To give the students an understanding of natural resources and ecosystems
		CO2	To create awareness among students about the importance of biodiversity and its conservation.
		CO3	To create awareness among students about the consequences of pollution and possible solutions to avoid pollution
		CO4	To familiarize students with human rights
		CO5	To examine the application of Human rights in the field
FINANCIAL MANAGEMENT	CO5CRT16	CO1	To learn the theoretical foundations of financial management and Financial management decisions.
		CO2	To familiarize the theories of capital structure and the concept of cost of capital
		CO3	To evaluate feasibility of various investment options
		CO4	To provide basic knowledge about working capital management .
		CO5	To understand the factors determining dividend policy adopted by companies.

BRAND MANAGEMENT	BA50PT22(A)	CO1	To introduce about brand identity and brand equity
		CO2	To make students aware about importance of branding and logo design of a brand.
		CO3	To familiarise the students with brand extension and co-branding
INCOME TAX-1	CO5OCT01	CO1	To collect the basic concepts and definitions of Income Tax Act 1961
		CO2	To know the residential status of assessee and incomes exempted from tax
		CO3	To familiar with the computation of income from salary
		CO4	To familiar with the computation of income from house property
		CO5	To familiar with the computation of income from business and profession
COMPUTERISED ACCOUNTING	CO5OCT02	CO1	To equip the students to meet the demands of the industry by mastering them with industry sought after computerized accounting packages.
		CO2	To expose the students to computer applications in the field of accounting.
		CO3	To develop practical skills in the application of tally accounting packages
		CO4	To develop awareness regarding statutory features especially GST features
		CO5	To make the students make aware of the payroll information and vouchers
Semester 6			
COST ACCOUNTING-II	CO6CRT17	CO1	To enable the students to understand job costing, batch costing and contract costing.
		CO2	To understand the students the different operating methods to control and reduce cost of rendering services
		CO3	To inform the students about the methods of costing and also used to ascertain the cost at each stage of manufacturing
		CO4	To aware the students to analyse the behavior of cost in relation to changes in volume of Output
		CO5	To understand the students about the different tools in the hands of management for effective utilization of resources.

ADVERTISING AND SALES MANAGEMENT	C06CRT18	CO1	By knowing about the various concepts related to advertisements, students will be able to identify misleading and false advertisements and will also get a general idea about framing advertisements.
		CO2	The students will acquire copy writing skills and will also be equipped with the ability to choose a particular medium for advertisement.
		CO3	The students will be able to decide an appropriate test for measuring the effectiveness of advertisement as they become aware of various tests for measuring the effectiveness of advertisements.
		CO4	Enable the students to prepare sales promotion budget and the knowledge about various sales promotion strategies may benefit those students who dream of a career in salesmanship.
		CO5	The students will be able to formulate their own strategies to manage sales force in their client organization.
AUDITING AND ASSURANCE	C06CRT19	CO1	To acquaint themselves about the concepts and principles of auditing , auditing process and the objectives of auditing
		CO2	To familiarize with basic terms used in auditing
		CO3	To know more about internal control and internal check system
		CO4	To understand the duties and liabilities of a company auditor
		CO5	To get knowledge about preparation of audit report
		CO6	To understand more about government audit ,audit of charitable and educational organizations, hospitals, clubs etc.
MANAGEMENT ACCOUNTING	C06CRT20	CO1	To understand the basic concepts of management accounting
		CO2	To understand the analysis of financial statements by using various methods
		CO3	To enable the students to understand different ratios used for analyzing financial Statements
		CO4	To helps the students to prepare fund flow statement for the business organization

		CO5	To helps the students to prepare the cash flow statement required for the business
INCOME TAX-II	C06OCT01	CO1	To familiar with the computation of capital gain
		CO2	To familiar with the computation of income from other sources
		CO3	To know about the aggregation of income and deduction u/s 80C to 80U
		CO4	To know about the assessment of individuals
		CO5	To aware about the income tax authorities and their powers and duties.
SOFTWARE FOR BUSINESS AND RESEARCH	C06OCT02	CO1	To impart knowledge to use IT in business research analysis
		CO2	To analyze data for business research
		CO3	To enable student to use SPSS for business research analysis
		CO4	To equip the students to use Libre office writer for research
		CO5	To help the students to use Libre office calc for business research operations

Department of Biotechnology

Program Outcomes, Program Specific Outcomes and Course Outcomes

Programme Outcomes: B. Sc. Botany and Biotechnology (Dual core)

Department of Biotechnology	After successful completion of three year degree program in Botany and Biotechnology a student should be able to;
Programme Outcomes	<p>PO-1. Understanding of major concepts in all disciplines of Botany and Biotechnology.</p> <p>PO-2. Solve the problem and also think methodically, independently and draw a logical conclusion.</p> <p>PO-3. Understand the evolution, history of plant phylum.</p> <p>PO-4. Gain knowledge about various techniques such as ELIZA techniques, DNA sequencing, DNA finger printing techniques, Somatic cell hybridization, cloning, Human Genome project etc.</p> <p>PO-5. Create an awareness of the impact of Biotechnology on the environment, society, and development outside the scientific community.</p> <p>PO-6. Use modern techniques, decent equipments and Biotechnology softwares</p> <p>PO-7. To study and understand the classification of whole phyla includes in Non chordates and Chordates with the help of charts/models/pictures.</p> <p>PO-8. Understand various physiological activities and immunological processes in human body</p> <p>PO-9. Methods to apply the knowledge from various social animals and their applications in the economic development.</p> <p>PO-10. Know the basics biochemical processes.</p>
Programme Specific Outcomes	<p>PSO-1. Gain the knowledge of Botany through theory and practicals.</p> <p>PSO-2. Understand and practice various techniques in the field of Recombinant DNA technology.</p> <p>PSO-3. Understand the testing of hypothesis using various biostatistical methods.</p> <p>PSO-4. Understanding animal diversity and physiological processes and applications of zoology.</p> <p>PSO-6. Understand biochemical processes by theory and practicals</p>

B. Sc. Botany and Biotechnology (Dual core)- Course outcomes

Course Name	Course Code	COs	Course Outcome
Semester 1			
Fine-tune Your English	EN1CCT01	1	Confidently write and speak English.
		2	Formal communication in English become effective
Methodology of Science and an introduction to Botany	BO1CRT01	1	Impart an insight into the different types of classifications in the living kingdom.
		2	Appreciate the world of organisms and its course of evolution and diversity
		3	Develop basic skills to study Botany in detail
		4	Understand the evolution, history of phylum.
Operating system and Office automation	BO1CRT14	1	Understand the basic computer applications
		2	Analyze errors in computer applications
Cell biology, Developmental biology and Evolution	BO1CRT15	1	Understand the basic chemical composition of living matter and the concept of continuity and complexity of life activities.
		2	Analyze the mechanisms involved in the developmental stages of plants and animals.
		3	Comprehend the process of evolution through inherited changes in the development of organisms.
Elementary Biochemistry	BC1CMT01	1	Understand the chemical interaction in biological systems
		2	Analyze biomolecules
		3	Separate biomolecules
Non Chordate diversity	ZY1CMT01	1	identify the non-chordates in their locality with a mind of conservation
		2	recognize the internal anatomy of organisms without dissecting it
		3	apply the knowledge they have acquired for the sustainable use of biodiversity resources in their locality
Semester 2			
Issues that matter	EN2CCT03	1	Exercise critical thinking and reasoning skills to discriminate and form informed opinions on issues that are relevant.
		2	Analyze theoretical learning to current developments in the world and relate to their everyday experiences.

		3	Enumerate ideas with confidence in group discussions.
		4	Compose imaginatively, impact fully, clearly and accurately based on their reading of the texts.
Microbiology, mycology plant pathology	BO2CRT02	1	memorizing reproductive structures and life history of fungus.
		2	analyze and distinguish the microbes, fungus and lichen in their locality
		3	distinguish the various plant diseases and design proper strategies for the management of plant diseases.
		4	apply the various measures adopted to control plant diseases
Molecular biology and methods in molecular biology	BOBT 2CRT04	1	Explain the basic theory and mechanisms of molecular biology
		2	Apply different molecular techniques and interpret the results obtained.
Biophysics and Instrumentation	BOBT2CRT03	1	gain knowledge on Biophysical techniques and their application in understanding structure and conformation of biological macromolecules
		2	understand structure –function relationships, molecular transport within the cell and across membranes.
		3	Develop the skills to understand the theory and practice of bioanalytical techniques.
Biomolecules	BC2CMTO2	1	Understand the structure and function of biomolecules
		2	Compare the structure and properties of biomolecules
		3	Apply the structural knowledge to substantiate the phenomena occurring in biomolecules
		4	Analyze qualitatively any biomolecule provided to them
Chordate diversity	ZY2CMTO2	1	identify the chordates in their locality with a mind of conservation,
		2	recognize the internal anatomy of organisms without dissecting it
		3	apply the knowledge they have acquired for the sustainable use of biodiversity resources in their locality
Semester 3			
Phycology and Bryology	BO3CRT03	1	Identify the anatomical variations in lower groups of plants.
		2	To trace the phylogeny, affinities and evolution of various groups of algae

		3	To describe and demonstrate the process of isolation, culture and maintenance of algae
Microbiology and Microbial technology	BOBT3CRT06	1	identify different microbial strains
		2	understand various techniques for the growth of microbial systems.
		3	understand various approaches involved in the standardization and industrial production of microbial strains.
		4	develop new strategies for synthesis of plant metabolites in microbial systems.
Immunology	BOBT3CRT06	1	Conceptualize how the innate and adaptive immune responses coordinate to fight invading pathogens.
		2	Determine what immunomodulatory strategies can be used to enhance immune responses or to suppress unwanted immune responses such as might be required in hypersensitivity reactions, tumours and transplantations or autoimmune diseases.
		3	Explore strategies to use immune molecules in diagnostic and clinical immunology and to improve existing vaccines.
		4	Critically review and determine the strengths and weaknesses of the various advancements published in the field of immunology.
Enzymology and Metabolism	BC3CMT03	1	define the terminologies used in enzymology and metabolism.
		2	describe schematically the various metabolic pathways.
		3	apply the general concepts of enzymology and metabolism into different reactions in the body.
		4	perform an enzyme extraction and assay.
Physiology and Immunology	ZY3CMT03	1	Identify the various physiological and immunological processes that happens inside the body of a healthy individual
		2	Easily identify causes and solutions of many health related issues
Semester 4			
Pteridology, Gymnosperms and Paleobotany	BO4CRT04	1	Study the anatomical variations in vascular plants.
		2	Understand the significance of Paleobotany and its applications.
Animal Biotechnology &	BOBT 4CRT07	1	Define the basic principles and techniques in animal biotechnology and Nano biotechnology.

Nanotechnology		2	Locate, apply and evaluate information from scholarly literature and other sources to expand their knowledge and skills on animal
Plant Biotechnology	BOBT 4CRT08	1	Identify and explain different tools and techniques of plant biotechnology and have knowledge about exploitation of different life forms and activities for human development.
		2	Understand about the potential of plant transgenics and various aspects of biosafety regulations, IPR and bioethic concerns arising from the commercialization of biotech products should be understood.
Nutritional and Clinical Biochemistry	BC4CMT04	1	explain the clinical significance of organ based function tests
		2	describe the biochemical basis of some important metabolic disorders.
		3	schematize the nutritional and biological importance of vitamins and minerals
		4	analyse the quantity of biomolecules.
Applied Zoology	ZY4CMT04	1	Identify the organisms in their natural habitat with a mind of conservation and self-employment and industry.
		2	Recognize the ecofriendly applications of zoology in income generation
Semester 5			
Anatomy, Reproductive botany, Micro techniques	BO5CRT05	1	memorizing reproductive structures and life history of angiosperms
		2	analyse and distinguish various kinds of plant tissue systems anatomically
		3	distinguish the various plant groups and assign them to proper taxonomic groups based on anatomical and reproductive characters
		4	apply understanding and knowledge on micro techniques in histological studies
Plant Physiology & Biochemistry	BO5CRT07	1	understand the basic principles related to various physiological functions in plant life
		2	role, structure and importance of the bio molecules associated with plant life
Environmental sciences and Human Rights	BO5CRT08	1	State the core concepts and methods of ecological sciences
		2	understand fundamental rights provided by Indian constitution
		3	Explain and interpret environmental issues scientifically
		4	Devise proper strategies for the sustainable progress of environment and nature

Recombinant DNA technology	BOBT5CRT09	1	Define basic principles, techniques and applications of recombinant DNA technology in life science
		2	Locate, apply and evaluate information from scholarly literature and other sources to expand their knowledge and skills on recombinant DNA technology
Human health and Nutrition	BC5D001U	1	know the position of nutrients in health, various effective methods of food processing and storage
		2	recognize different diseases related to improper nutrition
		3	suggest effective methods to cure such type of disorders in human.
Semester 6			
Angiosperm Morphology, Taxonomy & Economic Botany	BO6CRT11	1	Understand scientific name of the common plants in our environment and categorize them in to their respective plant families
		2	Construct floral diagram and floral formula of any of the flower in our environment
		3	Understand useful and economically important plants in our area.
Genetics, Plant Breeding and Horticulture	BO6CRT09	1	define the basic principles and inheritance in animal and plants
		2	apply the science of horticulture in human welfare
		3	apply their understanding and knowledge attained for crop improvement
		4	develop skill in gardening technique
Biostatistics	BO6CRT13	1	evaluate effectiveness of the statistical data
		2	design and test research hypothesis
Bioinformatics	BO6CRT23	1	Define basic principles and techniques in bioinformatics
		2	Locate, apply and evaluate information from scholarly literature and other sources to expand their knowledge and skills in bioinformatics
Phytochemistry and Pharmacognosy	BO6CBT03	1	apply their skills for identifying and isolating the phytochemical components of the plant having pharmaceutical property.
		2	find out adulteration of seeds
		3	Understand variations in ayurvedic formulations

Programme Outcomes: BBA

Department of Business Administration

Programme Outcomes

After successful completion of three-year degree program in Business Administration a student should be able to

- PO1. Understanding of major concepts in all disciplines
- PO-2. Think methodically and independently to solve the business problems
- PO-3. Understand the functions & features of major management principles
- PO-4. Gain knowledge about various techniques such as AIDA Principles
- PO-5. Create an awareness of the impact of micro & macro environment on business
- PO-6. Use modern techniques in solving business problems and in sound decision making
- PO-7. To study and understand the classification of markets
- PO-8. Understand principles behind permutations, combinations and logarithms
- PO-9. Apply the knowledge of management concepts in solving real life business problems
- PO-10. Know the basic concepts of management

Bachelor of Business Administration- Course outcomes

Course Name	Course Code	COs	Course Outcome
Semester 1			
Principles and Methodology of Management	BA1CRT01	CO1	Recall the key concepts of management and its managerial perspectives.
		CO2	Describe the managerial aspects about the ground realities of an organization.
		CO3	Analyze and build the ability to take managerial decisions at the best methods.
		CO4	Apply the knowledge about management in the real life business situation.
Business Accounting	BA1CRT02	CO1	Define the basic terms and concepts of accounting
		CO2	Describe the principles of accounting and accounting equation

		CO3	Explain about the depreciation accounting and important adjustments in final accounts
		CO4	Analyze the concept of bill of exchange in business
		CO5	Apply the understanding of concepts and accounting procedures in preparation of final accounts of sole trader
Fundamentals of Business Mathematics	BA1CMT03	CO1	Define basic number systems and set theory
		CO2	List down different operations performed on a set and a matrix
		CO3	Describe how to solve linear equations and algebraic systems.
		CO4	Explain the importance and applicability of mathematics in management studies.
		CO5	Analyze the underlying principles behind permutations, combinations and logarithms.
		CO6	Apply these concepts in solving real life business problems.
Fundamentals of Business Statistics	BA1CMT04	CO1	Define basic statistical terms and principles.
		CO2	List down different data collection and representation methods and forecasting techniques.
		CO3	Describe the underlying principles of various forecasting techniques like correlation, regression and time series analysis.
		CO4	Explain how to solve problems related to averaging and forecasting techniques.
		CO5	To analyze the relationship between two variables.
		CO6	Apply these concepts in solving business problems and in sound decision making.
ENGLISH PAPER I	BA1CCT05	CO1	Confidently use the language in both written and spoken forms
		CO2	Use English for formal communication effectively
Semester 2			
Cost and Management Accounting	BA2CRT06	CO1	Define the various concepts and terms used in Cost Accounting and Management Accounting
		CO2	Describe the basic terms in Cost Accounting and Management Accounting, Inventory
		CO3	Management Techniques and Inventory Control Techniques
		CO4	Explain and understand purchasing procedure, allocation and absorption of Cost.
		CO5	Apply the understanding of concepts in preparation of Cost Sheet and Reconciliation Statement.
Business Communication	BA2CRT07	CO1	Apply business communication strategies and principles to prepare effective communication for domestic and international business situations.
		CO2	Utilize analytical and problem solving skills appropriate to business communication.

		CO3	Select appropriate organizational formats and channels used in developing and presenting business messages
		CO4	Compose and revise accurate business documents using computer technology.
		CO5	Communicate via electronic mail, Internet, and other technologies.
Mathematics for Management	BA2CMT08	CO1	To develop scientific ability
		CO2	To know about modern trends in mathematics
		CO3	To know about problems in industry and management and to learn how to solve the problem
		CO4	To have research in Managerial Sciences.
Statistics for Management	BA2CMT09	CO1	Define probability and use the concept to predict the outcome of events.
		CO2	List down different theoretical distributions and understand its properties.
		CO3	Describe various sampling methods and differentiate statistics and parameters.
		CO4	Explain how to conduct large sample tests.
		CO5	Apply these concepts in solving business problems and in sound decision making.
English Paper II	BA2CCT10	CO1	Connect their theoretical learning in classrooms to current developments in the world and relate to their everyday lived experiences
		CO2	Present their ideas with confidence in group discussions.
		CO3	Sharpen their critical thinking skills and help them to analyze issues from diverse angles.
		CO4	Write imaginatively, clearly and accurately, based on their reading of the texts selected from some of the most respected writers.
Semester 3			
Human Resource Management	BA3CRT11	CO1	Define concepts in Human Resource Management.
		CO2	Describe the concepts and processes used in HRM.
		CO3	Apply the concepts and processes in solving HR problems.
Marketing Management	BA3CRT12	CO1	Define the basic terms and concepts of Marketing
		CO2	Describe different functions of marketing and market segmentation
		CO3	Explain about different pricing policies, factors affecting marketing mix and importance of sales promotion.
		CO4	Analyze the impact of various environmental factors on marketing.
		CO5	Apply the knowledge of marketing for the promotion of a product.
Research Methodology	BA3CRT13	CO1	Describe the role and importance of research in the social sciences.

		CO2	Define the issues and concepts salient to the research process.
		CO3	Identify and analyze the complex issues inherent in selecting a research problem, selecting an appropriate research design, and implementing a research project.
		CO4	Apply the concepts and procedures of sampling, data collection, analysis and reporting
Business Laws	BA3CMT14	CO1	To identify the principles behind law of contract
		CO2	To equip students to identify the validity of contracts
		CO3	To create awareness about various special contracts
Personality Development and Management Skills	BA3PRP15	CO1	Define the concept of organizational structure
		CO2	Describe the scope to develop an individual style
		CO3	Understand the role of communication, leadership, in decision making
		CO4	Apply the knowledge of motivation and conflict management.
Semester 4			
Financial Management	BA4CRT16	CO1	Define the basic terms and concepts of Financial Management
		CO2	Describe the scope of different finance functions
		CO3	Explain about different sources of finance
		CO4	Analyze the factors influencing capital structure and working capital of a company
		CO5	Apply the knowledge of financial management for computation of market value of a firm
Managerial Economics	BA4CRT17	CO1	Define the basic terms and concepts of Managerial Economics.
		CO2	Describe about market structure and different markets
		CO3	Explain about different pricing policies, factors of production and importance of production function.
		CO4	Analyze Business Cycle situation in the economy and
		CO5	Practical application of Managerial Economics Concepts and theories in decision making.
Entrepreneurship	BA4CRT18	CO1	Define the basic concepts of entrepreneurs and their classifications.
		CO2	Describe the various entrepreneurial development programmes.
		CO3	Explain the various legal requirements for establishing a New Unit.
		CO4	Analyze the business opportunity in various sectors.
		CO5	Apply the commission's guidelines for formulating a project report.
Basic Informatics for Management	BA4CMT19	CO1	Define the basic terminologies and concepts in Microsoft excel and computerized accounting packages.
		CO2	Describe different features of Microsoft excel and Tally Accounting Software

		CO3	Explain about the various formatting techniques in microsoft excel and various voucher types in tally accounting software.
		CO4	Analyze the impact of use of Excel and Tally accounting software in the present business scenario.
		CO5	Apply the knowledge of Microsoft excel and Tally accounting software in the preparation of Final Accounts.
Corporate Law	BA4CMT20	CO1	Define the basic concepts involved in the Incorporation of a company.
		CO2	Describe the various documents involved in Incorporation
		CO3	Explain the various modes of Winding Up.
		CO4	Analyze the various types of partnership and methods for dissolution of partnership.
		CO5	Apply the pollution control legislations for environmental protection.
Semester 5			
Organisational Behaviour	BA5CRT21	CO1	Recognize and manage conflict amongst groups in business environment
		CO2	Comprehend and apply motivational theories in the workplace
		CO3	Identify changes within organizations and power and politics in organizations
Environment Science and Human Rights	BA5CRT23	CO1	Define key concepts in environment management.
		CO2	Describe the multi-disciplinary nature of environmental studies, types of natural resources and theories in ecosystem and biodiversity.
		CO3	Explain the measures of air pollution and recent developments in biodiversity and conservation.
		CO4	Explain the basic terms in Right to Information Act and various concepts in Human Rights.
Intellectual Property Rights and Industrial Laws	BA5CMT24	CO1	Define the concepts of Patents, term and registration of patents, procedure for registration.
		CO2	Describe the importance Law relating to factories.
		CO3	Explain the Laws relating to Industrial Disputes, Laws relating to employees State Insurance.
		CO4	Analyse the concepts and importance of Consumer Protection Act.
Operation Management	BA5CRT25	CO1	Define the concepts of Operations Management and its importance in business organizations.
		CO2	Describe the importance of Quality Control, Methods and its application.
		CO3	Explain the Plant Layout and its functioning.
		CO4	Analyse the structure and components of Production and Control and their underlying need.
Industrial Relations	BA5CRT26	CO1	To gain knowledge about the employee's performance and their career planning.

		CO2	To understand how the employees, settle disputes through various labour policies and the role of trade union in industries.
Banking and Insurance	COICMT01	CO1	Define the key terms and concepts used in banking and insurance.
		CO2	Describe the relationship between a banker and customer.
		CO3	Explain the types of insurance policies.
		CO4	Analyze the reforms initiated in Banking and insurance sector.
Introduction to Retail Management	BA6OCT27	CO1	Define the basic concepts involved in logistics and retail management.
		CO2	Explain the various logistics strategy and various functions involved in the operations of retail stores.
		CO3	Understand the role of logistic providers, and realize the meaning of customer service and understand its importance to logistics management.
		CO4	Analyze how logistical decisions (e.g., facilities, inventory, and transportation) impact the performance of the firm.
Semester 6			
Advertising and Salesmanship	BA6OCT28	CO1	Define the basic terms and concepts of advertisements.
		CO2	Describe different functions of advertising agencies.
		CO3	Explain the significance of advertisement copy.
		CO4	Analyze the role of advertising and sales promotion in marketing.
		CO5	Apply the skills of salesmanship for closing the sales.
Strategic Management	BA6CRT29	CO1	Define the basic terminologies and concepts in Strategic Management.
		CO2	Describe the practical and integrative models of strategic management process that defines basic activities in strategic management.
		CO3	Explain about the knowledge and abilities in formulating strategies and strategic plans.
		CO4	Analyze the competitive situation and strategic dilemma in dealing with dynamic business environment.
		CO5	Apply the knowledge of strategic evaluation and control in the organizational setting to tackle the competitive environment.
Communication Skills and Personality Development	BA6CRT30	CO1	Define the concepts of Speeches and Presentation.
		CO2	Describe the importance of drafting business messages.
		CO3	Explain the audio video recording and Dialogue Discussion.
		CO4	Analyse the importance of communication skills and Personality Development in Business field.
Management Project	BA6PRP31	CO1	Articulate a clear research question or problem and defining scope.

	CO2	Formulate a hypothesis from research problem.
	CO3	Identify appropriate research design for the identified problem.
	CO4	Conduct literature review and identify the conceptual framework for research.

Bachelor of computer application- Program outcomes

PROGRAMME OBJECTIVE

The Programme in Computer Application and Science is designed with the following specific objectives.

1. To attract young minds to the potentially rich & employable field of computer applications.
2. To be a foundation graduate programme which will act as a feeder course for higher studies in the area of Computer Science/Applications.
3. To develop skills in software development so as to enable the graduates to take up self employment in Indian & global software market.
4. To Train & Equip the students to meet the requirement of the Industrial standards.

PROGRAM SPECIFIC OUTCOME

The Programme in Computer Application and Science is designed to

PO1 Attract young minds to the potentially rich & employable field of computer applications.

PO2. Pursue higher studies in the area of Computer Science/Applications.

PO3 Develop skills in software development so as to enable the graduates to take up self- employment in Indian & global software market.

PO4 Train & Equip the students to meet the requirement of the Industrial standards

Bachelor of computer application- Course outcomes			
Course Name	Course Code	CO	Course Outcome
Semester 1			
Computer Fundamentals and Digital Principles	CA1CRT01	1	Define the fundamental concepts of computers and digital electronics.
		2	Describe the basic concepts of computer and electronics including operating system and Networks
		3	Apply Boolean laws and theorems in simplifying Boolean functions.

		4	Solve problems like conversion between various number systems, binary arithmetic, simplifying digital circuits, Boolean expressions, combinational and sequential circuits.
		5	Design logic circuits with minimum cost
Methodology of Programming and C	CA1CRT02	1	Explain the semantics of various syntax of "C" programming language.
		2	To be aware of the various concepts in Computer Programming.
		3	Apply optimum memory management techniques for declaring and processing data.
		4	Develop C programs to solve real world problem.
Software Lab I (Core)	CA1CRP01	1	Develop problem-solving skills to translate "Algorithms" of problems to programs using C language.
		2	Write effective and efficient well-structured and Modular C programs.
		3	Develop into competent programmers with the ability to solve problems of reasonable size and design code
Fine Tune Your English	ENG	1	Recognize the terms and concepts of elementary grammar.
		2	Identify the principles of language.
		3	Apply the grammatical rules in formal and informal communication effectively.
		4	Analyze the situations where different grammatical units are used
		5	Develop the ability to compose pieces of literary writing.
Discrete Mathematics (I)	MM1CMT03-MATHS	1	Define the fundamental concepts of set theory.
		2	Apply propositional and predicate logic.
		3	Apply the concepts of relation to Partially Ordered Sets and Complete Lattices.
		4	Solve problems with Modular arithmetics, Group Theory.
Basic Statistics and Introductory Probability Theory	STAT	1	Students will be able to define the basic concepts of statistics and probability theory.
		2	Students will be able to explain various measures and methods used for both univariate and bivariate data

		3	Students will be able to apply methods and theorems to solve various statistical problems
		4	Students will be able to compare different methods used for analyzing the data
		5	Students will be able to solve the problems given a set of data and can validate it
Semester 2			
Issues That Matter	ENG	1	Describe the major issues of contemporary significance
		2	Explain the conflicts and themes raised through war authoritarian regimes, and refugees
		3	Evaluate the concurrent issues from diverse perspectives
		4	Analyse the current developments in the world
Discrete Mathematics (II)	MM2CMT03	1	Define the important terms used in the various topics included in the course.
		2	Demonstrate an understanding of Boolean Algebra (including logic gates), Graphs, Trees and Matrices.
		3	Apply the operations of Matrices, Boolean Algebra and the theory of Graphs and Trees to solve problems.
Data Base Management System	CA1CRT03	1	Define the terminology, features, models, schema and characteristics of a database systems.
		2	Explain the concept of Transaction and Query processing.
		3	Retrieve any type of information from a data base by applying complex queries in SQL.
		4	Design conceptual models of a database using ER modelling for real life applications and also construct queries in Relational Algebra.
		5	Create a normalized database for a real life application.
Computer Organization And Architecture	CA1CRT04	1	Students will be able to define the fundamental concepts of computers organization
		2	Students will be able to describe the theory and architecture of computer and its fundamental parts including parallel processing and pipelining

		3	Students will be able to determine the coordination and the role of different components in the computer for a program execution
		4	Students will be able to analyze and compare the architectural differences in different processors.
		5	Students will be able to evaluate the enhancement in the performance of computer by incorporating new concepts and technological developments
Object oriented programming with C++	CA1CRT05	1	Students will be able To Demonstrate the use of various OOPs concepts with the help of programs.
		2	Students will be able to Classify inheritance with the understanding of early and late binding, usage of exception handling, generic programming.
		3	Students will be able to Describe the concept of function overloading, operator overloading, virtual functions and polymorphism.
		4	Students will be able to Understand dynamic memory management techniques using pointers, constructors, destructors.
		5	Students will be able to Illustrate the process of data file manipulations using C++
Software Lab- II	CA1CRP02	1	Create and alter table structures using MySQL.
		2	Build subqueries to extract rows from processed data.
		3	Formulate queries to perform Insert, update and delete, select and rollback operations in a database.
		4	Create nested queries to perform various operations.
Semester 3			
Advanced Statistical methods	ST3CMT32-STAT	1	Define and state the advanced statistical methods used for statistical inferences.
		2	Describe various distributions, estimation and hypothesis concepts.
		3	Apply various methods to solve statistical problems as well as to test a hypothesis.

		4	Compare different statistical methods that can be applied in different circumstances.
		5	Judge the type of test applicable for hypothesis validity according to the given situations.
Computer Graphics	CA1CRT06	1	Define the fundamental concepts of computers graphics
		2	Describe the use of the components of a graphics system and become familiar with building approach of graphics system components and algorithms related with them.
		3	Apply computer graphics concepts in various applications
		4	Analyze the fundamentals of computer graphics including animation, underlying technologies, principles, and applications
		5	Evaluate and compare the 2D and 3D concepts while applying to various applications
Microprocessor and PC Hardware	CA1CRT07	1	Apply knowledge and demonstrate programming proficiency using the various addressing modes and data transfer instructions of the target microprocessor and microcontroller.
		2	Compare accepted standards and guidelines to select appropriate Microprocessor (8085 & 8086) and Microcontroller to meet specified performance requirements.
		3	Analyze assembly language programs; select appropriate assemble into machine a cross assembler utility of a microprocessor and microcontroller.
		4	Design electrical circuitry to the Microprocessor I/O ports in order to interface the processor to external devices.
		5	Evaluate assembly language programs and download the machine code that will provide solutions real-world control problems.
Data Structure using C++	CA1CRT08	1	Students will be able to state the features of operating systems.
		2	Students will be able to explain the concepts of operating systems.
		3	Students will be able apply knowledge relating to the concepts of operating systems.

		4	Students will be able to distinguish the concepts of operating systems.
		5	Students will be able to evaluate various types of resource management used in operating systems.
Data Structure using C++	CA1CRT09	1	Students will be able to understand the nature of different data structures and define them.
		2	Students will be able to describe different data structures and explain the operations permissible on data structures.
		3	Students will be able to illustrate the various data structures representations, file organizations and hashing techniques.
		4	Students will be able to compare the different data structures and evaluate their pros and cons.
		5	Students will be able to develop algorithms to resolve various real-world problems.
Software Lab III	CA1CRP03	1	Students will be able to list the different linear and non linear data structures.
		2	Students will be able to explain various data structures, their operations and storage mechanisms.
		3	Students will be able to construct algorithms for creating and manipulating different types of data structures.
		4	Students will be able to develop programs which manipulates the different data structures to solve problems of varying natures.
Semester 4			
Operational Research	OR	1	Students will be able to define linear and nonlinear programs
		2	Students will be able to explain where operations research applies and about simulation
		3	Students will be able apply knowledge on various linear and nonlinear programming
		4	Students will be able to estimate the transportation cost of products from source to destination and evaluate the travelling cost.
		5	Students will be able to Construct the network diagram

Design and Analysis of Algorithms	CA1CRT10	1	Define the terminology, features, and basic concepts of analysis and design of algorithms.
		2	Explain different existing methods and algorithm.
		3	Apply important algorithmic design patterns and methods of analysis
		4	Analyze the complexities of various algorithms.
		5	Compare the performance of different algorithms for a real life application.
System Analysis & Software Engineering	CA1CRT11	1	Able to define software engineering process and practices, and demonstrate various process models
		2	Able to describe the process of system modelling in detail
		3	Students will be able to apply system testing and validation in the development life cycle
		4	Illustrate the use of system testing and validation in the development life cycle.
		5	Students will be able to design the SRS document for project.
Linux Administration	CA1CRT12	1	Students will be able to define the various terminologies related to the Linux operating system.
		2	Students will be able to explain the operations of various Linux commands.
		3	Students will be able to illustrate the working and functionalities of the Linux operating system.
		4	Students will be able to analyze shell script programs and troubleshoot the outputs.
		5	Students will be able to develop shell script programs to automate system tasks.
Web Programming using PHP	CA1CRT13	1	Students will be able to state the features of web programming.
		2	Students will be able to explain the concepts of web programming.
		3	Students will be able apply knowledge relating to the concepts of web programming.
		4	Students will be able to distinguish the concepts of web programming.

		5	Students will be able to evaluate the concepts of web programming.
Software Lab IV	CA1CRP04	1	Students will be able to list the directory and file based commands of Linux
		2	Students will be able to explain various filter utilities.
		3	Students will be able to create and manage users in Linux.
		4	Students will be able to develop shell script programs to solve problems of varying natures.
Semester 5			
Computer Networks	CA1CRT14	1	Able to define the general principles of data communication and networking
		2	Able to describe the different types of network topologies and protocols.
		3	Students will be able to apply the different types of network devices and their functions within a network
		4	Illustrate the layers of the OSI model and TCP/IP.
		5	Students will be able Understand and design the skills of subnetting and routing mechanisms.
IT and Environment	CA1CRT15	1	Students will be able to Define the concepts of IT and Environment.
		2	Students will be able to explain the concepts of IT and Environment.
		3	Students will be able to illustrate concepts of IT and Environment
		4	Students will be able to distinguish how the concepts of IT and Environment related to real life .
		5	Students will be able to apply the concepts of IT and Environment in real life .
Java Programming using LINUX	CA1CRT16	1	Students will be able to recall various object oriented concepts in Java.
		2	Students will be able to compare programming concepts and identify its applicability in problem solving.
		3	Students will be able to apply their knowledge on various object oriented programming concepts to solve real world problems.

		4	Students will be able to judge and decide on the best method to solve a problem
		5	Students will be able to develop application as well as applet programs using Java.
OPEN COURSE	OPEN COURSE	1	Students will be able to know about the guiding principles and theories of Management
		2	Students will be able to understand the core functions of Management.
		3	Students will be able to apply the stages of recruitment in different organization.
		4	Students will be able to customize & suggest appropriate performance appraisal system for the organisation.
		5	
Software Lab V	CA1CRP05	1	Student will understand oops concept and basics of Java programming
		2	Students will be able to apply error handling techniques using exception handling and multithreading.
		3	Students will be able to describe Java data types, Control Structures, functions, Object oriented programming concepts
		4	Students will be able to analyze various requirements need for developing applications and identify solutions to computational problems
		5	Students will be able to develop GUI using Applet and AWT tool kit.
Semester 6			
Cloud Computing	CA5CRT17	1	Learn the basics of cloud computing including its benefits, challenges and services. Explain the concepts of resource virtualization, resource pooling sharing and provisioning
		2	Discuss the scaling in cloud, capacity planning and load balancing. Explain file system and storage.
		3	Describe the multi-tenant software and data in cloud. Learn database technology. Describe the content delivery network, security reference model, security issues, privacy and compliance issues.

		4	Explain portability and interoperability issues and cloud management, a programming model case study. Enumerate popular cloud services.
		5	Understand the enterprise architecture and SOA, Enterprise software, Enterprise custom applications, workflow and business processes, enterprise analytics and search and enterprise cloud computing ecosystem.
Mobile Application development- Android	CA5CRT18	1	Define the basic fundamentals of Android
		2	Students will be able to understand the programming concepts & UI of Android
		3	Students will be able to apply activity and understand the usage of services in android
		4	Students will be able to develop database application using SQLite
		5	Students will be able to explain the implementation of JSON and develop applications using google play services, location services & maps
Elective	CA6PET - ELECTIVE	1	Define the key terms and concepts used in brand management.
		2	Describe meaning and importance of branding
		3	Explain the different types of brand promotion.
		4	Concept of Brand positioning and brand equity
		5	Analyze the importance of brand extension and brand licensing.

BSc- Psychology

Program outcomes

- Get exposure to and understand various fields of Psychology
- Acquire theoretical knowledge about the physiological basis of human behaviour
- Understand the statistical procedures essential for conducting research in Psychology
- Gain theoretical knowledge about different disorders and their therapeutic management
- Understand the basic concepts of counselling and set the ground for higher learning
- Acquire practical knowledge of significant scientific tests and experiments in Psychology

Course Outcomes

Semester-1			
Foundations and methods of psychology	PY1CRT01	CO1	Generate interest in psychology
		CO2	The students will understand the various perspectives in psychology
		CO3	The students will be able to understand the evolution of psychology as a scientific discipline
Body systems and behaviour	PY1CMT02	CO1	The students will be able to understand the physiological basis of the psychological process
		CO2	Students will understand the physiological reasons behind many overt behaviours that humans exhibit
Basic statistics-paper i	PY1CMT03	CO1	Will equip students with the basic statistical principles and methods
Fine tune your english	EN1CC01	CO1	confidently use English in both written and spoken forms. .
		CO2	Introduce the students to the basics of grammar, usage and effective communication
		CO3	Use English for formal communication effectively
Pearls from the deep	EN1CC02	CO1	Appreciate and enjoy works of literature.
		CO2	Appreciate the aesthetic and structural elements of literature.
Kadhasahithyam	ML1CCT01	CO1	Introduce students to the world of literature and inculcate reading habit and interest for literature
		CO2	Understand the evolution of malayalam literature
		CO3	Undertsand the contemporary life situation in relation to the varied perspectives in the literary world
Prose and one act plays	HN1CCT01	CO1	Provide general information about hindi literature through prose and one act plays
		CO2	To familiarise students to various trends in hindi literature
		CO3	To create awareness of Indian literature

		CO4	Understanding various trends in hindi and get an awareness of theatre in the context of once act plays
French language & communicative skills - i	FR1CCT01	CO1	Aims at introducing the basics of French language and grammar to the students
		CO2	Develop the four language skills at the initial level
		CO3	Introduce students to the fundamentals of French language, such as French alphabets and phonetics, essential grammar and simple vocabulary
		CO2	Students will understand the importance and relevance of learning statistical methods for future use in psychological research
Semester -2			
Basic cognitive processes	PY2CRT04	CO1	Students' meta cognitive abilities will improve
		CO2	Will be able to understand psychological processes that contribute to individual differences
		CO3	Will understand basic cognitive processes of the human beings
Biological basis of behaviour	PY2CMT05	CO1	Will be able to understand the physiological process behind sexual behaviour
		CO2	Understand the physiology of stress sleep and arousal
		CO3	Understand the biology of genetics and genetic disorders
Statistical tools- paper ii	PY2CMT06	CO1	Understand the measures of dispersion, range and deviations
		CO2	Will be able to understand and interpret range correlation
Issues that matter	EN2CC03	CO1	To sensitize the learners to contemporary issues of concern
		CO2	Identify the major issues of contemporary significance
		CO3	Respond rationally and positively to the issues raised
		CO4	Internalise the values imparted through the selections.
Savouring the classics	EN2CC04	CO1	To introduce the students to the taste of time tested world classics
		CO2	Become familiar with the classics from various lands.
		CO3	Understand the features that go into the making of a classic.
Kavitha	ML2CCT02	CO1	Introduce students to the world of literature and inculcate reading habit and interest for literature
		CO2	Understand the evolution of Malayalam literature

		CO3	Understand the contemporary life situation in relation to the varied perspectives in the literary world
French language & communicative skills - ii	FR2CCT02	CO1	Introducing the basics of French language and grammar to the students
		CO2	Develop the four language skills at the initial level
		CO3	Introduce students to the fundamentals of French language, such as French alphabets and phonetics, essential grammar and simple vocabulary
Short stories and novel	HN2CCT02	CO1	Develop independent outlook towards the study of language and communication
		CO2	Learn hindi for effective communication in different fields like administration, media and business
		CO3	Understanding translation as a linguistic, cultural, economic and professional activity
		CO4	Familiarizing the practical grammar and analysing the problems and challenges of effective communication in hindi
Semester-3			
Living in the social world	PY3CRT07	CO1	To understand the psychological processes behind human behaviour in a social setting
		CO2	Explain the psychological aspects of various social phenomena(Understand the psychological aspects of various social issues in the society and the nation)
		CO3	Implication of social psychology in everyday living
Neurophysiology of behaviour	PY3CMT08	CO1	To help students understand brain behaviour relationship
Probability and probability distributions	ST3CMT23	CO1	Understand the basic concepts, different approaches, conditional probability
Psychology practicals-i	PY3 P01	CO1	To introduce the basic concepts of experimental psychology
		CO2	To facilitate comprehension of the theoretical concepts through experiments
		CO3	To develop awareness of psychological instruments and techniques.
		CO4	To provide basic training in planning and conducting experiments.
Poetry grammar and translation	HN3CCT03	CO1	To give the basic knowledge about hindi grammar and translation
		CO2	To make the students understand different types of poetry
Advanced course in French ii	FR3CCT03	CO1	Introduce students to comprehending & understanding the written French
		CO2	Introduce students to the 'parts of speech' with emphasis on French language

		CO3	Be able to make dialogues in daily personal & professional life situations
Malayalagadya rachanakal	ML4CCT04	CO1	Educate students about Kerala's rich visual arts tradition
		CO2	Introduce visual arts such as cinema
		CO3	Introduce students to literature of old visual arts
Literature and/as identity	EN3CC05	CO1	The subtle negotiations of Indigenous and Diasporic identities with-in Literature
		CO2	The fissures, the tensions and the interstices present in South Asian regional identities.
		CO3	The emergence of Life Writing and alternate/alternative/marginal identities.
Semester-4			
Social interactions and human behaviour	PY4CRT10	CO1	To understand the psychological processes behind human behaviour in a social setting
		CO2	Explain the psychological aspects of various social phenomena(Understand the psychological aspect of various social issues in the society and the nation)
		CO3	Implication of social psychology in everyday living
		CO4	To help the students to get an understanding on measuring human behaviour
Biophysiology of behaviour	PY4CMT11	CO1	To help students to understand the branch of psycho-neuroimmunology
		CO2	To understand the physiological basis of basic processes
Psychology practical-ii	PY4 P02	CO1	To study experimentally the sensory experience and perceptual processes
		CO2	Experimentally prove how our perceptual process differs and affect our cognitive processes
		CO3	To observe and study the social psychological phenomenon in every days life situations.
Statistical inference	ST4CMT24	CO1	To understand the concepts of hypotheses testing
		CO2	Get introduced to large sample tests
Illuminations	EN4CC06	CO1	To acquaint the learners with different forms of inspiring and motivating literature
		CO2	maintain a positive attitude to life.
		CO3	evaluate and overcome setbacks based on the insights that these texts provide.
Memoirs		CO1	realize the power and potential of malayalam prose
		CO2	Understand the method and potential of memoirs
		CO3	Enable students to use good prose correctly

Drama and long poem	HN4CCT04	CO1	To introduce students to historical drama
		CO2	To expose the students to different types of social issues through long poems
Advanced course in french ii	FR3CCT04	CO1	Culture and civilization of French language
		CO2	Introduction to the landscapes & places of touristic interests in France
		CO3	Work environment, culture & expectations while in France
		CO4	Curriculum Vieta, education levels and basic etiquette required for the French culture
Semester -5			
Abnormal behaviour	PY5CRT13	CO1	To acquaint the students with the history and meaning of abnormal behaviour
		CO2	To develop in them awareness about classification systems
		CO3	To acquaint the students with the basic minor and major disorders
		CO4	To have an understanding regarding the causal patterns and treatment of disorders
Foundations of organizational behaviour	PY5CRT 14	CO1	To familiarize and learn concept of human organizations and behaviour in organizations.
		CO2	To introduce topics like Leadership, Motivation, Power, Conflict, Negotiation, in organizations and to learn strategies to Manage organizations more effectively.
Environmental psychology and human rights	PY5CRT 15	CO1	To encourage students to do research, investigate how and why things happen, and make their own decisions about complex environmental issues by developing and enhancing critical and creative thinking skills. It helps to foster a new generation of informed consumers, workers, as well as policy or decision makers
		CO2	To help students understand how their decisions and actions affect the environment, build knowledge and skills necessary to address complex environmental issues, as well as ways to take action that can keep our environment healthy and sustainable for the future. It encourages character building, and develop positive attitudes and values
		CO3	To develop a sense of awareness among the students about the environment and its various problems and to help the students in realizing the interrelationship between man and the environment and helps to protect the nature and natural resources
		CO4	To help the students to acquire the basic knowledge about the environment and the social

			norms that provide unity with environmental characteristics and create a positive attitude about the environment.
		CO5	To acquaint students with the nature and basic concepts of environmental psychology
		CO6	To synthesize diverse information relevant to human-environment relationships in the context of environmental psychology.
- Basics of counselling psychology	PY5OP1	CO1	To facilitate Students with nature and process of counselling and its meaning
		CO2	To expose the Students to different factors and applications of counselling
		CO3	To enable the Students to acquire sufficient knowledge in the area of counselling in order to apply in various walks of life
Experimental psychology	PY5 P01	CO1	To develop scientific and experimental attitudes in the student.
		CO2	To facilitate comprehension of the theoretical concepts through experiments
		CO3	To develop the skills of observation and scientific reporting in psychology
		CO4	To provide basic training in planning and conducting a psychological experiment
Semester-6			
Psychology of maladaptive behaviour	PY6CRT16	CO1	To encourage the students to know the causal pattern and the different therapeutic techniques in the management of personality, somatic symptom and dissociative disorders
		CO2	To acquaint the students with the symptoms of childhood disorders, substance dependence and neurocognitive disorders
Managing behaviour in organization	PSY6 CRT17	CO1	To familiarize and learn concept of human organizations and behaviour in organizations.
		CO2	To introduce topics like Leadership, Motivation, Power, Conflict, Negotiation in organizations and to learn strategies to Manage organizations more effectively.
Child development	PY6CRT18	CO1	To understand the process and nature of child development
		CO2	To create and inspire interest in observing the process of child development
		CO3	To learn to relate the observation to current theories of child development
Theory and practice of counselling	PY6CB01	CO1	To understand the process and technique of counselling
		CO2	To differentiate the various approaches to counselling
		CO3	To be aware of the assumptions and issues of counselling applications

Psychological assessment	PY6 P02	CO1	To develop the ability to understand self and others
		CO2	To familiarize with psychological instruments and tools
		CO3	To generate interest in the analysis of psychological data
		CO4	To develop the skills of testing and scientific reporting in psychology
		CO5	To generate interest in working in the community with a psychological outlook
Research project	PY6 PR02	CO1	This enables the students to get firsthand experience in doing research
		CO2	Research experience allows undergraduate students to better understand published works, learn to balance collaborative and individual work, determine an area of interest, and jump start their careers as researchers
		CO3	Through exposure to research as undergraduates, many students discover their passion for research and continue on to graduate studies and faculty positions