

JIWAJI UNIVERSITY, GWALIOR

School of Studies in Computer Science and Application

This school of studies was established in 1995 with the aim to impart quality education through various teaching programmes and research activities in the field of Computer Science. The school currently offers 3-years full time course in Master of Computer Application (MCA) recognized by All India Council of Technical Education (AICTE) a two years full time course in M.B.A e-Commerce, a three years Bachelor degree in Computer Applications (B.C.A.), a one year post graduate diploma in Computer Applications (PGDCA) and one year M.Phil in Computer Science & Applications programme.

The school is also a recognized research centre in Computer Science leading to **Ph.D. degree**. Currently, many research scholars are working in various fields of Computers.

Programme Outcomes (POs) For M.C.A. Programme

Aim of MCA programme is to impart comprehensive knowledge and practical skills covering all aspects of computer uses in business, industries and service sectors. Students will get expertise to perform as application system designer, implementers, developers and managers in foremost areas of computer applications.

Our distinguishing features are:

- Up-to-date knowledge of broad range of disciplines of Computer Science & Applications.
- Wide-range of knowledge and practical skills to promote software development.

Programme Specific Outcomes (PSOs)

Curriculum of Computer Application is designed to prepare post graduates to attain the following program specific outcomes:

PSO1: An ability to develop and manage Software's.

PSO2: An ability to practice or apply acquired knowledge of various subjects of computer application curriculum in professional employment areas.

PSO3: Display innovative ideas of software development in the field of information Technology.

PSO4: Explore global research opportunities for doctoral studies in the field of computer science & applications.

PSO5: Demonstrate skills of self employment based business by using front end and backend coding skills .

PSO6: Display their true potential and get endorsement through qualifying in various Central and State level competitive Examinations

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PSO7: Acquire the ability to engage in self dependent and limit less learning of innovative theories and skills in the field of Computer science and applications.

Course Outcomes (COs) For M.C.A. Programme Introduction To Information Technology

Students after studying Introduction To Information Technology course are expected:

CO1: To develop a basic understanding of the field of IT, define the term “Information Technology” and recognize related areas.

CO2: To learn the emergence of IT, namely Computer Science, Information Systems, and Computer Engineering

CO3: To understand general idea of translators such as assemblers compilers and interpreters.

CO4: To study the functionality of Linkers & Loaders.

CO5: To have deep insight into the concepts of file organization and its types.

Mathematical Foundations Of Computer Science

Students after studying Mathematical Foundations Of Computer Science course are expected:

CO1: To understand discrete mathematical preliminaries.

CO2: To learn about Boolean algebra, groups and fields.

CO3: To apply discrete mathematics in formal representation of various computing constructs.

CO4: To explore the importance of analytical problem solving approach in engineering problems.

CO5: To have deep insight into the application of graphs in Computer Science.

Programming And Problem Solving In 'C'

Students after studying Programming And Problem Solving In 'C' course are expected:

CO1: To understand the basic concept of C programming, and its different modules.

CO2: To gain knowledge of decision ,loop control structures and other programming constructs.

CO3: To apply acquired knowledge in writing C - program .

CO4: To study various building blocks and advanced programming techniques.

CO5: To contribute in the development of system software and other applications using “C” language.

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Computer Organization And Assembly Language Programming

Students after studying Computer Organization And Assembly Language Programming course are expected:

CO1: To learn the basic concept of assembly language and understand difference between computer architecture and computer organization .

CO2: To apply knowledge to trace and debug at the assembly level.

CO3: To understand and extend simple CPU implementations.

CO4: To explore about interrupt/exception handling and make simple performance estimates for assembly code.

CO5: To have skills to design the data path and control unit of a simple CPU.

Oral And Written Communication

Students after studying Oral And Written Communication course are expected:

CO1: To recognize meaning and importance of effective communication.

CO2: To understand objectives and media of communication.

CO3: To gain knowledge of effective written communication strategies.

CO4: To study different communication processes and their practical applications.

CO5: To have skills of mastering the art of a professional business presentations.

Operating Systems

Students after studying Operating Systems course are expected:

CO1: To understand to analyze the structure and basic architectural components involved in OS.

CO2: To display competence in recognizing and using operating system features.

CO3: To gain knowledge of implementation of different operating systems aspect.

CO4: To apply knowledge of different operating system algorithms.

CO5: To contribute and make enhancements in the features of operating systems.

Data Base Management Systems

Students after studying Data Base Management Systems course are expected:

CO1: To understand to analyze database design methodology.

CO2: To gain knowledge in fundamentals of database management system to analyze the difference between traditional file system and DBMS.

CO3: To apply knowledge of different database languages.

CO4: To study various data models for database and write queries.

CO5: To have knowledge of Distributed database and its applications.

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Data Structure Using 'C' Language

Students after studying Data Structure Using 'C' Language course are expected:

CO1: To recognize to manage large amounts of data efficiently and gain understanding of linear and non linear data structures .

CO2: To learn use of efficient data structures and design efficient algorithms.

CO3: To apply different kinds of data structures which are suited to different kinds of applications.

CO4: To study various algorithm of linear and non linear data structures.

CO5: To have knowledge of Searching, Hashing & Sorting and use it appropriately.

Probability And Combinatorics

Students after studying Probability And Combinatorics course are expected:

CO1: To know basic concepts and principles of Probability And Combinatorics.

CO2: To gain knowledge of probability and nature of random variables.

CO3: To study use of generating function to solve the engineering problems.

CO4: To apply the permutations and combinations to solve various problems.

CO5: To learn about the nature of system using the recurrence relations.

Software Engineering

Students after studying Software Engineering course are expected:

CO1: To understand basic concepts related to System Analysis & Design.

CO2: To gain knowledge of Software engineering fundamentals.

CO3: To apply software engineering principles and techniques

CO4: To develop, maintain, evaluate large scale software systems and produce efficient, reliable, robust and cost-effective software solutions.

CO5: To have skills of effective member or leader of software engineering teams and manage time, processes and resources effectively.

Computer Networks

Students after studying Computer Networks course are expected:

CO1: To learn the basic taxonomy and terminology of computer networking area.

CO2: To enrich various concepts of Protocol Hierarchies, Design Issues, Interfaces and Services including Connection Oriented and Connection less Services.

CO3: To study about OSI Layers, LAN,MAN,WAN , Internet and IEEE Standards.

CO4: To build network topologies and use appropriate network tools .

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CO5: To have skills of implementation of Network Security and Socket Programming.

Object Oriented Programming Using C++

Students after studying Object Oriented Programming Using C++ course are expected:

- CO1:** To learn the basic concept of Object Oriented Programming like Object, Classes, Inheritance, Reusability, Polymorphism & Overloading.
- CO2:** To understand application of Constructor, Destructor, Function overloading, this pointer, and Operator overloading.
- CO3:** To study mechanism and applicability of various types of functions in C++.
- CO4:** To build Applications/Projects using C++.
- CO5:** To have knowledge about UML concepts, object-oriented paradigm, visual modeling and UML diagrams,.

Unix & Shell Scripting (Elective)

Students after studying Unix & Shell Scripting course are expected:

- CO1:** To learn about structure of UNIX like Kernel, shell and features of UNIX.
- CO2:** To understand Unix file system command for file manipulation
- CO3:** To study about advanced features including multi user communication & Scheduling.
- CO4:** To build programs using Shell programming.
- CO5:** To have knowledge about Linux structure, Various flavors of Linux and Installation of Linux.

ERP And BPR Allied Concepts (Elective)

Students after studying ERP And BPR Allied Concepts course are expected:

- CO1:** To understand various ERP & BPR methodologies and their applications.
- CO2:** To gain knowledge about Business Functions, Processes, Data Requirements, Production & Materials Management Information System.
- CO3:** To study issues and challenges of applying tools/techniques of Information Technology for BPR.
- CO4:** To apply acquired knowledge of ERP & BPR methodologies in the industry
- CO5:** To contribute in the field of ERP and BPR implementation.

Computer Based Numerical And Statistical Techniques

Students after studying Computer Based Numerical And Statistical Techniques course are expected:

- CO1:** To understand various errors in numerical approximation.
- CO2:** To display understanding of common numerical methods like Arithmetic, Floating point number,

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operations, Normalization, and their consequences.

CO3: To study Simultaneous linear equations & Solutions of simultaneous linear equations.

CO4: To apply acquired knowledge of Interpolation, Iterative methods and Regression Analysis

CO5: To learn about Probability Theory.

Organizational Behavior

Students after studying Organizational Behavior course are expected:

CO1: To learn fundamental concepts related to Organizational Structure, behavior and context.

CO2: To understand the behavior of people in the organization and analyze the complexities associated with management of the group behavior in the organization

CO3: To study Components of organization, nature and variety of organizations.

CO4: To apply acquired knowledge of Principles underlying design of organization

CO5: To have skills to use knowledge of Interpersonal skills and Group Dynamics in an organization .

Analysis And Design Of Algorithms

Students after studying Analysis And Design Of Algorithms course are expected:

CO1: To learn Basics of Algorithm Analysis and basic Design & Analysis Techniques.

CO2: To understand advanced Data Structures and gain knowledge of backtracking and graph coloring problems.

CO3: To study the greedy programming technique to solve the problems.

CO4: To apply appropriate design techniques to solve real world problems and calculate complexity.

CO5: To have skills to use knowledge of dynamic programming technique to solve the problems.

Theory of Computation (Elective)

Students after studying Theory Of Computation course are expected:

CO1: To understand basics of languages, grammars and automata.

CO2: To gain deep insight into the concepts of Formal languages.

CO3: To apply acquired knowledge of context free grammar and PDA.

CO4: To learn about Turing Machine and its types.

CO5: To have analytical thinking for problem-solving in related areas of Computability

Distributed System (Elective)

Students after studying Distributed System course are expected:

CO1: To recognize the advantages and challenges in designing distributed algorithms for different

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primitives

CO2: To understand Process and synchronization in Distributed Systems.

CO3: To know about Consistency, Replication, fault tolerance and security in Distributed Systems.

CO4: To develop deep knowledge of Distributed Object Based and File Systems.

CO5: To contribute in design and development of distributed systems subject to specific design and performance constraints.

Java Programming

Students after studying Java Programming course are expected:

CO1: To gain knowledge about basic Java language syntax and semantics.

CO2: To understand various concepts and constructs of Java language

CO3: To apply concepts of Java to write programs

CO4: To explore fundamentals of object-oriented programming in Java, including defining classes, invoking methods, using class libraries, Constructor, Methods overloading, Method overriding.

CO5: To contribute in the development of software using Java Programming skills.

Optimization Techniques

Students after studying Optimization Techniques course are expected:

CO1: To learn the theory of optimization methods and algorithms developed for solving various types of optimization problems.

CO2: To develop and promote research interest in applying optimization techniques in problems of Engineering and Technology

CO3: To apply the mathematical results and numerical techniques of optimization theory to concrete Engineering problems.

CO4: To explore basics of Game Theory and its application.

CO5: To understand fundamentals of Dynamic Programming.

Accounting And Management Control

Students after studying Accounting And Management Control course are expected:

CO1: To understand the role of accounting and its principles.

CO2: To gain knowledge to prepare financial statements in accordance with accepted accounting principles

CO3: To apply acquired knowledge in the accounting cycle and support at a basic level the recording and reporting of financial information for business.

CO4: To study about basics of Standard Costing and Budgetary Control.

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CO5: To have an understanding of tally software in accounts.

Artificial Intelligence & Expert Systems

Students after studying Artificial Intelligence & Expert Systems course are expected:

CO1: To understand basic concepts of artificial intelligence, early developments in this field, basic knowledge representation, problem solving, and learning methods of artificial intelligence.

CO2: To know strengths, and weaknesses of the basic knowledge representation, problem solving, and learning methods in solving particular problems.

CO3: To study game playing as problem solving, representation of a game as a state space, state space search, heuristic search, blind and informed search.

CO4: To develop understanding of natural language processing

CO5: To contribute in the development of expert system and make progress in the field of AI, soft computing, fuzzy systems and robotics etc.

Computer Graphics & Multimedia

Students after studying Computer Graphics & Multimedia course are expected:

CO1: To learn basic concepts of computer graphics and multimedia and to understand contemporary graphics hardware and software.

CO2: To display skills of input, output mechanism, do scan-conversion and display objects on screen, fill regions and draw curves.

CO3: To apply acquired knowledge to transform objects in 2d and 3d, clip object in 2d using different mechanisms

CO4: To study detection of visible surfaces using algorithms .

CO5: To have working knowledge of multimedia.

Simulation And Modeling

Students after studying Simulation And Modeling course are expected:

CO1: To learn principles and techniques of simulation methods.

CO2: To gain clear understanding of the need for the development using simulation.

CO3: To know the limitation of simulation technique and applications

CO4: To apply the components of continuous and discrete systems and simulate them, to model any system from different fields.

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CO5: To contribute in the simulation methods using acquired knowledge.

Data warehousing and data mining

Students after studying Data warehousing and data mining course are expected:

CO1: To understand the functionality of the various data mining and data warehousing concepts.

CO2: To find out the strengths and limitations of various data mining and data warehousing models.

CO3: To apply and gain knowledge of analyzing techniques and methodologies used in data mining

CO4: To develop analysis skills using different approaches of data warehousing and data mining technologies.

CO5: To have knowledge about Testing the Data Warehouse and security.

Cloud Computing (Elective)

Students after studying Cloud Computing course are expected:

CO1: To learn fundamentals of cloud computing.

CO2: To understand cloud architecture, types, services & the basic concepts of security systems.

CO3: To gain deep insight of cryptographic protocols in cloud computing.

CO4: To study virtualized infrastructure security and methods to improve virtualization security.

CO5: To have knowledge of market Based management of Clouds

.Net Technology (Elective)

Students after studying .Net Technology course are expected:

CO1: To acquire knowledge of fundamental concepts of .Net Technology.

CO2: To develop database driven applications and web services.

CO3: To apply and Implement client/server model for any application

CO4: To build Console application and windows application.

CO5: To contribute in the development of ASP.NET Web application and Services.

Internet of things (Elective)

Students after studying Internet of things course are expected:

CO1: To recognize the technology of IOT and its application areas.

CO2: To learn to analyze and evaluate protocols used in IOT.

CO3: Apply the concepts of IOT to different applications.

CO4: To develop and design applications using IOT.

CO5: To have knowledge of analysis and evaluate the data received through sensors in IOT.

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System Development Project Report

Students after completing System Development Project Report course are expected:

- CO1:** To learn in real life project development environments involving deadlines and teamwork.
- CO2:** To having hands on experience of real life system development life cycle.
- CO3:** To apply the technologies learnt during the course in real life projects
- CO4:** To explore and use upcoming technologies in project development not covered during the course
- CO5:** To contribute in the development of software and applications for the welfare of society.

System Development Project work Demonstration

Students after completing System Development Project work Demonstration course are expected:

- CO2:** To display skills of presentation of their project work.
- CO3:** To gain focus on critical sections of the project work .

Programme Outcomes (POs) For M.B.A. (E-Commerce) Programme

This curriculum of an E-commerce Master of Business Administration (M.B.A.) program is technology - driven. Courses are designed in such a way to prepare candidates as per the needs of Industries and it encourages to utilize their technical skills in the field of I.T. and E – Marketing. This program aims to enable students to utilize their acquired knowledge and skills to pursue their career in the areas of Big Data Analytics, Logistics Management, Digital Marketing, Technology Management , Product Development, Web-Development and Maintenance, Internet Security, banking and Inventory Management. The faculty is committed to provide an environment that addresses the individual needs of each student and encourages them to develop their potential

Our distinguishing features are:

- Up-to-date knowledge of broad range of disciplines of E-commerce and IT.
- Provide Grooming in the latest e-commerce technologies for increased reliability, security in the business transactions efficiently.
- Best Theoretical and practical knowledge of contemporary technologies.

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Programme Specific Outcomes (PSOs)

Curriculum of E- commerce is designed to prepare post graduates to attain the following program specific outcomes:

PSO1: An ability to develop and manage E- Commerce based applications.

PSO2: An ability to practice or apply principles of E – Commerce, E –Marketing & other skills in various professional employment areas.

PSO3: Display innovative strategies and ideas in the field of E-Commerce.

PSO4: Explore global research opportunities & enhances development in the field of E-Commerce.

PSO5: Demonstrate knowledge with respect to E-Commerce based Businesses in his/her own startups.

PSO6: Display their true potential and get endorsement through qualifying in various Government competitive Examinations

PSO7: Acquire the ability to engage in self dependent and life long learning process of new advancements in the E –commerce and IT.

Course Outcomes (COs) For M.B.A. (E-Commerce) Programme Introduction To E- Commerce

Students after studying Introduction To E- Commerce course are expected:

CO1: To learn the fundamentals of E – Commerce and its process.

CO2: To understand the role of E- commerce in the present scenario along with the concepts of security and its applications.

CO3: To gain knowledge of e-commerce business needs, resources and match to technology considering human factors and budget constraints.

CO4: To apply knowledge of changing technology on traditional business models and strategy.

CO5: To have skills to Communicate effectively and ethically using electronic communication.

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Introduction To Information Technology

Students after studying Introduction To Information Technology course are expected:

- CO1:** To know about the basic concepts of information technology and its Applications.
- CO2:** To understand fundamental concepts related to computer organization.
- CO3:** To gain knowledge of programming languages and functions of operating system.
- CO4:** To apply acquired knowledge of Machine Language, Assembly Language and High Level languages .
- CO5:** To have deep insight into the concepts of Cloud computing, networking and Big Data.

Programming In 'C'

Students after studying Programming In 'C' course are expected:

- CO1:** To learn about Problem identification, various mathematical and engineering problems.
- CO2:** To display coding skills of designing algorithms, flowcharts and programs.
- CO3:** To study the basic programming constructs and logic skills
- CO4:** To develop problem solving skills from the acquired knowledge.
- CO5:** To have the knowledge to create applications using C language.

Organizational Behavior

Students after studying Organizational Behavior course are expected:

- CO1:** To learn the concept of organization behavior and people in the organization
- CO2:** To understand the complexities associated with management of the group behavior in the organization.
- CO3:** To gain knowledge of theory of motivation and apply these theories in understanding motivation behind behavior of people in the organization
- CO4:** To get deep insight of organization power and politics
- CO5:** To have knowledge about organization change, conflicts and understand skills of stress management.

Information Systems Management

Students after studying Information system management course are expected:

- CO1:** To learn about fundamentals of MIS and its structure.
- CO2:** To understand the leadership role of Management Information Systems in achieving business competitive advantage through informed decision making.
- CO3:** To know about the functions of various subsystems and apply this acquired knowledge.
- CO4:** To study concept of information and its role in decision making.
- CO5:** To have knowledge of system development life cycle and its role in development.

Web Technologies

Students after studying Web Technologies course are expected:

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CO1: To learn to create html documents involving variety of elements ,types, including hyperlinks, images, list, tables and forms.

CO2: To understand fundamentals of CSS and its code.

CO3: To apply the acquired knowledge of Advanced CSS in building web applications.

CO4: To develop and implement interactive web pages using DHTML.

CO5: To contribute in the development of webpage using Java Script.

OOPS USING C++

Students after studying OOPS Using C++ course are expected:

CO1: To acquire all the concepts of object oriented programming and techniques of program development within the object-oriented paradigm

CO2: To enrich the various concepts of object oriented programming in developing solutions to problems and apply knowledge of control structures and operators.

CO3: To gain knowledge of using functions in C++ environment.

CO4: To develop programs using the concepts of class and objects and understands the application of constructors & Destructors.

CO5: To have skills to apply and use concepts of reusability and polymorphism .

Software Engineering and Software Project management

Students after studying Software Engineering and Software Project management course are expected:

CO1: To recognize software development processes of models and software project management.

CO2: To gain the fundamental knowledge about Project Management, Software Maintenance & Software Quality Assurance.

CO3: To apply Testing to improve software quality.

CO4: To explore fundamentals of Software Configuration Management & its elements.

CO5: To learn about most suitable process models best fit for solving a given problem .

Database Management System

Students after studying Database Management System course are expected:

CO1: To understand database concepts, applications, structure , need and database terminologies.

CO2: To know about fundamentals of Relational Algebra and recovery & backup.

CO3: To gain skills to create logical design of databases, including the E –R method and normalization approach.

CO4: To explore issues of transaction processing and concurrency control.

CO5: To have back-end project management skills.

.NET Technologies

Students after studying .NET Technologies course are expected:

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CO1: To learn fundamentals of .Net framework

CO2: To enrich knowledge about Windows Forms , Controls and ASP.net based applications.

CO3: To gain proficiency in C# by building stand-alone applications in the .NET framework using C#.

CO4: To build data-driven applications using the .NET Framework, C#, and ADO.NET

CO5: To have skills to create web-based applications and Reports using .NET technologies

Managerial Economics

Students after studying Managerial Economics course are expected:

CO1: To develop an idea of management and its uses in day to day life.

CO2: To know about each functions of management and to understand the ability to understand how management serves as a guideline to sustain in professional life

CO3: To gain an understanding of professional and ethical responsibilities so as to analyze and solve contemporary issues

CO4: To apply knowledge about Product, cost analysis, Profits, and market opportunities to anticipate future market trends and dynamics.

CO5: To contribute in Enhancing the understanding of economics and its impact on organization.

Principles Of Management

Students after studying Principles Of Management course are expected:

CO1: To learn the basics of management and its principles.

CO2: To gain knowledge of industrial management environment.

CO3: To apply the knowledge of Planning and decision making in Organizations.

CO4: To develop skills of organizing , controlling and designing organization structure.

CO5: To have knowledge of tools for measuring performance of organization.

E-Marketing

Students after studying E-Marketing course are expected:

CO1: To recognize the meaning , challenges , Opportunities and the significance of E – marketing .

CO2: To gain deep knowledge about electronic marketing information system and various sources of Marketing .

CO3: To know about E- Marketing strategies & its benefits.

CO4: To apply acquired knowledge of E -Marketing communication and Ethics & Laws

CO5: To contribute in formulation of an integrated and comprehensive E-marketing plan.

Data Mining & Data Warehouse

Students after studying Data Mining & Data Warehouse course are expected:

CO1: To learn fundamentals of Data mining & warehouse and its goals, features, context and types.

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CO2: To gain knowledge of architectures of data warehouse and its operations.

CO3: To study process of Constructing a Data Warehouse System.

CO4: To apply the knowledge of data mining and its techniques for exploratory analysis of the data.

CO5: To have knowledge about Testing the Data Warehouse and security

Business Communication

Students after studying Business Communication course are expected:

CO1: To recognize key principles in business communication.

CO2: To understand meaning of Feedback in communication and barriers to communication.

CO3: To gain deep insight of business presentation skills.

CO4: To explore knowledge about business writing communication skills.

CO5: To learn skills of Group discussions and interviews.

Accounting And Management Control (Elective)

Students after studying Accounting And Management Control course are expected:

CO1: To acquire knowledge and understanding of management accounting and control.

CO2: To display the ability to analyze critically the Accounting system.

CO3: To understand, Accounting principles, concept and procedures

CO4: To develop broad understanding of journal, ledger, cash book and financial statements of a business organization

CO5: To have knowledge of the key concepts of standard costing and responsibility centres.

Consumer Behavior and Brand Management (Elective)

Students after studying Consumer Behavior and Brand Management course are expected:

CO1: To gain fundamental knowledge of consumer behavior & Brand Management.

CO2: To understand Consumer Motivation and Consumer Perception

CO3: To study Family Decision making, Social Class, Culture and its influence on Consumer Behavior

CO4: To develop understanding of Brand and related concepts.

CO5: To have skills to manage Brands in different Sectors.

JAVA Programming

Students after studying JAVA Programming course are expected:

CO1: To gain deep insight of the core and advanced concepts of Java and practice object oriented analysis and design in the construction of applications.

CO2: To display the ability to employ various types of constructs and logics in a Java program.

CO3: To learn ability to use Exception Handling & Multithreaded Programming in a Java program.

CO4: To apply acquired knowledge to develop web-based program.

CO5: To contribute in the development of applications using knowledge of Advanced Java.

Introduction to Oracle

Students after studying Introduction to Oracle course are expected:

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CO1: To learn about the fundamental concepts of Oracle and understand database creation , its management and acquire knowledge of Data base Administration .

CO2: To gain deep insight of SQL Plus, Creation, Insertion, Updation, Deletion of tables and other SQL constructs.

CO3: To know skills of Joining Multiple Tables and Granting Permissions in database.

CO4: To build application using concepts of PL/SQL.

CO5: To have knowledge of Oracle Procedures & Functions.

ERP And BPR Allied Concepts

Students after studying ERP And BPR Allied Concepts course are expected:

CO1: To understand evolution of ERP, Growth, advantages of ERP and ERP related technologies.

CO2: To gain knowledge of different business processes of the organization and relationship among all processes.

CO3: To apply acquired knowledge of Production & Materials Management Information System.

CO4: To develop skills of ERP Implementation Life Cycle.

CO5: To have understanding of Business Process Reengineering (BPR) & its Implementation

Software Testing (Elective)

Students after studying Software Testing course are expected:

CO1: To know basics of software testing and testing terminologies

CO2: To develop skill of Test Case Design and strategies.

CO3: To apply acquired knowledge in testing of software

CO4: To explore different levels Of Testing.

CO5: To contribute in the designing of test cases and gain knowledge of testing tools.

Fundamentals of Python (Elective)

Students after studying Fundamentals of Python course are expected:

CO1: To gain deep insight of Python and its libraries.

CO2: To learn manipulation with Text Files in Python.

CO3: To apply knowledge of Object Oriented Programming and fundamental Concepts using Python.

CO4: To explore Objects and their use and recursive Problem Solving skills.

CO5: To have deep understanding of Numerical Computing in Python.

PHP

Students after studying PHP course are expected:

CO1: To learn fundamental concepts of PHP and its various programming constructs.

CO2: To develop simple web application using server side PHP programming.

CO3: To gain deep insight of Object Oriented Concepts in PHP

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CO4: To apply knowledge of advance PHP concepts in applications.

CO5: To have knowledge of database Connectivity using MySQL.

Project work

After successfully finishing the course, the student will be able:

CO1: To acquire improvements in their team building, communication and management skills.

CO2: To develop potential solutions for various problem domains by utilizing their programming skills reflecting the knowledge gained during the entire course.

CO3: To apply acquired knowledge and develop an efficient project report.

Programme Outcomes (POs)

For M.Phil. (Computer Science & Application) Programme

MPhil (Computer Science and Application) Programme is designed to develop scholars into mature researchers, able to make original scientific contributions that have both practical significance and a rigorous, elegant theoretical grounding that underpins the various areas of Computer Science and applications.

Programme Specific Outcomes (PSOs)

Curriculum of MPhil (Computer Science & Application) is designed to prepare students to attain the following program specific outcomes:

PSO1: An ability to develop research ideas in the field of computer science & Application

PSO2: An ability to practice or apply acquired knowledge of various subjects in the field of research.

PSO3: Display innovative ideas of research in the field of computer science & information Technology.

PSO4: Explore global research opportunities for doctoral studies in the field of computer science & applications.

PSO5: Demonstrate skills of self employment using acquired knowledge.

PSO6: Display their true potential and get endorsement through qualifying in various Central and State level competitive Examinations.

PSO7: Acquire the ability to engage in self dependent and limit less learning of innovative theories and skills in the research field of computer science and applications.

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Course Outcomes (COs) For M.Phil. (Computer Science & Application) Programme Research methodology

Students those are pursuing Mphil degree, after successfully finishing Research methodology course, will be capable:

CO1: To develop innovative ideas related to various fields of computer science such as AI , data mining cloud computing and networking and many more.

CO2: To having hands-on/operational experience of different technologies and software's.

CO3: To cultivate technologies, those are more effective and easy to use for society

Computer Application using web technologies

After successfully finishing the Computer Application using web technologies course, the student will be able:

CO1: To develop specialized computational skills

CO2: To gain proficiency in working with different software, beneficial for research studies using web technologies.

Optional Advance subjects in the relevant field

(Software Technology/ Data mining and data warehouse/ Advance networking and security system/ Software testing & Quality Assurance)

After successfully finishing (Software Technologies/ Data mining and data warehouse/ Advance networking and security system/ Software testing & Quality Assurance) course, the student will be able:

CO1: To acquire useful information and to gain deep knowledge of relevant field .

CO2: To develop theoretical and practical knowledge of selected subject.

CO3: To apply the advanced knowledge of relevant field in research problems

Review of published research in the relevant field

Upon successfully completion of review of published research in the relevant field course the student will be able:

CO1: To identify key questions about a topic that need further research and determination of methodologies used in past studies of the same or similar topics.

CO2: To develop solid foundation of knowledge in the area and get knowledge for the direction any new research should take.

Synopsis submission

Upon successfully completion of Synopsis submission the student will be able:

CO1: To acquire improvements in research problem identification skills .

CO2: To develop potential solutions for various problem domains by utilizing their research skills reflecting the knowledge gained during the entire course.

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CO3: To apply acquired knowledge and develop an efficient Synopsis report.

Final Dissertation/ Project presentation

Upon successfully completion of Final Dissertation/ Project presentation the student will be able:

CO2: To display skills of presentation in Final Dissertation/ project presentation

CO3: To gain focus on contemporary research problems in the field of computer science & application.

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