



Dr. D. Y. Patil Pratishthan's

D. Y. Patil Institute Master of Computer Application & Management

(Approved by AICTE, New Delhi & Affiliated to Savitribai Phule Pune University)

Dr. D. Y. Patil Educational Complex, Sector 29, Pradhikaran, Akurdi, Pune - 411 044

Programme-MCA

Course:	C Programming with Data structure MCA Semester-I	Course Code:	IT12
CO1	Students will be able understand the C concepts and apply it to the real World		
CO2	Students will be able to design solutions using function and structure.		
CO3	Students will be able to identify a solution for real world problems of maintaining Database through file handling.		
CO4	Students will be able to understand and demonstrate the concept of Exception Handling.		
CO5	Students will be able to develop Applications using various data structures.		
CO6	Students will be able to create a stack and queue based applications using Array.		

Course:	PPMOB MCA Semester-I	Course Code:	BM11
CO1	Student will able to understand the major frameworks to analyze markets, industries and consumers by applying fundamental concepts and principles of management, including the basic roles, skills, and functions of management		
CO2	Student will able to apply various models, types of decisions and tools to take decisions in different situations.		
CO3	Student will able to recognize the concepts of values, attitudes, personality and emotions.		
CO4	Student will able to learn various personal factors which influence individual behavior, impact of other factors.		
CO5	Student will able to discover and comprehend the various theories of motivation.		
CO6	Student will able to know the individual process in organization such as learning, perception, attribution and individual differences.		
CO7	Student will able to understand the foundations of group behavior and the mechanisms of teamwork.		
CO8	Student will able to discover and understand the concept of leadership, power and politics and conflict resolution.		

Course:	Fundamental of Computers MCA Semester-I	Course Code:	IT11
CO1	Students will be able apply the basic logic gates concepts to design sequential and Combinational circuits.		
CO2	Students will be able to understand the basics terminology of computer hardware and software		
CO3	Students will be able to interpret the data in various number systems		
CO4	Students will be able to apply the knowledge of CPU Organization for assembling computer system.		
CO5	Students will be able to analyze various types of memories and effective utilization of it.		

Course:	Software Engineering MCA Semester-I	Course Code:	IT13
CO1	Students will be able to identify process model for given Problem		
CO2	Students will be able to formulate project plan and apply estimation techniques.		
CO3	Students will be able to describe the basic concept of software engineering used in IT industry and		
CO4	Students will be able to evaluate quality of software and its maintenance.		

Course:	Database Management System MCA Semester-I	Course Code:	IT14
CO1	Students will be explain the features of database management systems and relational database.		
CO2	Student will be able to learn to write different SQL queries on relational database.		
CO3	Student will be able to understand transaction concept of database.		
CO4	Student will be able to design the database structure by applying the concepts of Entity-relational model and Normalization..		
CO6	Students will be able to demonstrate the principles behind systematic database design approaches by		
CO&	Studenst will be explore the different concepts related to database sucurity and access control		
CO8	Students will be able to design the different applications based on the concepts of transaction management, recovery techniques.		

Course:	Business Process Domain MCA Semester-I	Course Code:	BM12
CO1	Students will be able to learn & understand the processes and practices in business and their applications.		
CO2	Students will be able to introduce advance business applications like CRM and SCM		
CO3	Students will be able to learn the financial aspect of business and management.		
CO4	Students will be able to learn and analyze the financial statements of a business.		

Course:	Essentials of Operating System MCA Semester-II	Course Code:	IT21
CO1	Students will be able to demonstrate the knowledge of basics of Operating System		
CO2	Students will be able to interpret various OS Functions and Process management and understand the		
CO3	Students will be able to identified and formulate the mechanisms involved in memory management in		
CO4	Students will be able to Compare and analyze different operating systems being used in real world.		
CO5	Students will be able to apply the knowledge memory management, file management, process		
CO6	Students will be able to create, adapt and apply appropriate computing tools to computing activities		

Course:	Core Java MCA Semester-II	Course Code:	IT23
CO1	Students will be able understand the concepts of Object Oriented Programming and apply it to the real		
CO2	Students will be able to implement a solution for multidimensional Array problem.		
CO3	Students will be able to develop standalone Applications using Swing and AWT package in Java		
CO4	Students will be able to design solutions for execution of multiple processes at a time using		
CO5	Students will be able to understand and demonstrate the concept of Collection Framework.		
CO6	Students will be able to create a File handling applications.		

Course:	Discrete Mathematics MCA Semester-II	Course Code:	MT21
CO1	Students will able understand mathematical reasoning and basic logic statements in order to read,		
CO2	Student will able to understand how to work with discrete structures, which are the abstract		
CO3	Students will be able to apply algorithms of discrete structures such as tree to solve complex problems.		
CO4	Students will be able to construct their own models of graphs to simplify or solve practical problems.		
CO5	Student will able to realize the basic nature, relation and applicability of discrete objects and apply		
CO6	Student will able to identify the limitations of different discrete mathematical structures.		

Course:	Essentials of Networking MCA Semester-II	Course Code:	IT24
CO1	Students will be able to understand the concepts of basic computer network technology.		
CO2	Students will be able to identify the different types of network devices and their functions within a		
CO3	Students will be able to understand and demonstrate the Common Network Architecture, Connection		
CO4	Students will be able to understand the functions of OSI Reference Model and TCP/IP protocol.		
CO5	Students will be able to learn conceptual knowledge of IP Addressing & Routing.		
CO6	Students will be able to understand and demonstrate Broad Band Networks Integrated Service Digital		

Course:	Web Technologies MCA Semester-II	Course Code:	IT22
CO1	Students will be able to understand, analyze and apply the role of markup languages like HTML& CSS		
CO2	Students will be able to understand and create client-side based application using Javascript.		
CO3	Students will be able to understand, analyze and build dynamic web pages using classic ASP.		
CO4	Students will be able to design dynamic and interactive web pages by embedding JavaScript code in		
CO5	Students will be able to develop the web applications for different end users by using set of		

Course:	Essentials of Marketing MCA Semester-II	Course Code:	BM21
CO1	Students will be able to judge the company orientation towards the market place		
CO2	Students will be able to design a marketing mix for a hypothesized product/ service.		
CO3	Students will be able to differentiate between Organizational Buying behavior and consumer buying		
CO4	Students will be able to construct a buyer decision process		
CO5	Students will be able to designing Segments and Target Online Customers for any particular product/		
CO6	Students will be able to appraise the Differentiation and Positioning Strategies of any particular		

Course:	Advanced Internet Technologies MCA Semester-III	Course Code:	T1-IT34
CO1	Students will be able to understand and apply the role of markup languages like HTML5, CSS3 &		
CO2	Students will be able to create , adapt and apply appropriate techniques to develop client-side and		
CO3	Students will be able to understand, analyze and build dynamic web pages using server-side		
CO4	Students will be able to develop effective functionality with the help of individual and as a member		
CO5	Students will be able to understand and demonstrate the concept of Angular- Js.		
CO6	Students will be able to design and evaluate projects based on the specified requirements.		
CO7	Students will be able to identify the principles of coherent web coding and good visual design.		

Course:	Advanced Data Structure & C++ Programming MCA Semester-III	Course Code:	T1-IT31
CO1	Students will be able understand the concepts of Object Oriented Programming and apply it to the real		
CO2	Students will be able to design solutions using friend function and Operator Overloading.		
CO3	Students will be able to identify a solution for real world problems of maintaining Database through		
CO4	Students will be able to understand and demonstrate the concept of Exception Handling.		
CO5	Students will be able to develop Applications using various data structures.		
CO6	Students will be able to create a Tree and Graph based applications using Linked List.		

Course:	MMTP MCA Semester-III	Course Code:	ITC31
CO1	Student will able to learn different e-learning technologies , different communication technologies		
CO2	Student will able to apply a wide range of relevant digital applications for creating digital		
CO3	Student will able to explore the use of multimedia and virtual applications in fashion presentations.		
CO4	Student will able to design, manage and execute professional presentations and publish a presentation		
CO5	Student will able to use in Power Point the contents of the files that were prepared in different		
CO6	Student will able to Utilize several Flash tools and tactics learned throughout the course to produce an		
CO7	Student will able to identify and use the major functions of Photoshop CS4.		

Course:	Design and Analysis of Algorithm MCA Semester-III	Course Code:	T1-IT32
CO1	Student will be able to solve the problem using mathematical abilities.		
CO2	Students will be able to identify the complexity of the algorithms.		
CO3	Student will be able to find optimal solution by applying various methods.		
CO4	Students will be able to apply the knowledge of Dynamic programming to solve real world problems		
CO5	Students will be able to understand and demonstrate the concept of Backtracking and Brach and		
CO6	Students will be able to use research based knowledge to design and understand the concepts of NP-		

Course:	Probablity and Combinatorics MCA Semester-III	Course Code:	MTC31
CO1	Students will able understand core ideas in combinatorial mathematics in order to apply combinatorial		
CO2	Student will able to analyses the dependence of various principles and able to solve diverse practical		
CO3	Students will be able to identify, explain, and compute probabilities and conditional probabilities in		
CO4	Students will be able to evaluate and demonstrate the use of mathematical distributions which helps		
CO5	Student will able to realize the basic nature, relation and applicability of discrete probability		
CO6	Student will able to identify the limitations of different continuous probability distribution structures		

Course:	Object Oriented Analysis and Design MCA Semester-III	Course Code:	T1-IT33
CO1	Students will be able to analyze the concepts of various Object-based view of Systems and its		
CO2	Students will be able to inculcate necessary skills to handle complexity in software design and create a		
CO3	Students will be able to learn the nature of design patterns by understanding a small number of		
CO4	Students will be able to discuss and analyze OO design heuristics, patterns or published guidance,		
CO5	Students should possess an ability to practically apply knowledge software engineering methods, such		
CO6	Students should have an ability to identify, formulate and solve software development problems:		

Course:	Python Programming MCA Semseter-IV	Course Code:	T1-IT42
CO1	Student will be able to understand the python programming concept		
CO2	Students will be able to apply the concepts of List, Tuple, Dictionary in application.		
CO3	To understand, analyze and build projects based on file handling.		
CO4	Students will be able to use functions, classes, and apply it to the applications.		
CO5	Students will be able to understand and apply the concepts of error handling		
CO6	Students will be able to create the application and validate it using regular expression in Python.		

Course:	Advanced Database Management System MCA Semester-IV	Course Code:	T1-IT43
CO1	Students will be able to analyze the concepts of various database architectures.		
CO2	Students will be able to analyze the concepts and working of Parallel Database		
CO3	Students will be able to apply the knowledge of Distributed Database System to solve real world problem		
CO4	Students will be able to discuss and analyze different types of Specialty Databases and their		
CO5	Students will be able to understand and demonstrate the concept of Data Warehousing and Data		
CO6	Students will be able to understand various data mining algorithm and solve data analysis problems		
CO7	Students will be able to use research based knowledge to understand the concepts of Information		

Course:	Advanced Java MCA Semester-IV	Course Code:	T1-IT41
CO1	Students will be able understand the concepts of Network Programming and apply it to the real World.		
CO2	Students will be able to identify a solution for real world problems of Database Programming.		
CO3	Students will be able to develop Web Applications using Server Side Programming.		
CO4	Students will be able to design solutions using Enterprise Java Beans.		
CO5	Students will be able to understand and demonstrate the concept of Remote Method Invocations		
CO6	Students will be able to create a Spring Framework based applications using modern tools.		

Course:	Optimization Techniques MCA Semester-IV	Course Code:	ITC41
CO1	Students will be able understand basic concepts of Linear programming which will help them to get an		
CO2	Student will be able to analyse the dependence of various machines and able to solve diverse job		
CO3	Students will be able to identify, explain, and determine and streamline staffing needs, scheduling and		
CO4	Students will be able to reach the optimal decision of replacing a used equipment, product, staff or		
CO5	Student will be able to realize the basic nature, models of inventory with its application to solve complex		
CO6	Student will be able to explore the Network analysis Techniques to understand the project planning ,		

Course:	Research Methodology and Statistical Tools MCA Semester-IV	Course Code:	ITC42
CO1	Students should know why educational research is undertaken, the audiences that profit from research		
CO2	Students should impart knowledge about tools available for carrying out research with the evidence of		
CO3	Students will be able to understand research terminology and aware of the ethical principles of		
CO4	Students will be able to describe quantitative, qualitative and mixed methods approaches to research.		
CO5	Students should understand the link between quantitative research questions and data collection and		
CO6	Students will be able to identify the components of a literature review process, data collection methods		
CO7	Students will be able to construct a coherent research proposal that includes an abstract, introduction,		

Course:	Cloud Computing MCA Semester-IV	Course Code:	T1-IT44
CO1	implication in Industry.		
CO2	Students will be able to learn & Understand various basic concepts related to cloud computing technology		
CO3	Students will be able to Design and develop highly scalable cloud-based applications by creating and		
CO4	Students will be able to Compare, contrast, and evaluate the key trade-offs between multiple		
CO5	This module gives students the skills and knowledge to understand how Cloud Computing		

Course:	Big Data Analytics MCA Semester-V	Course Code:	T1-IT53
CO1	Students will be able to analyze the concepts of various Big data and its implication in Industry.		
CO2	Students will be able to analyze the concepts and working of Workload Database.		
CO3	Students will be able to apply the knowledge of Big Data Analytics to solve real world problems.		
CO4	Students will be able to discuss and analyze different types of NoSQL Databases and their		
CO5	Students will be able to understand and demonstrate the concept of Map Reduce		
CO6	Students will be able to understand Hadoop Architecture and differentiate between components		
CO7	Students will be able to use research based knowledge to understand the concepts of Hadoop		

Course:	Mobile Application Development MCA Semester-V	Course Code:	T1-IT54
CO1	Students will be able to understand the concepts of Android Programming Architecture.		
CO2	Students will be able to configure Android Studio with their mobile phones.		
CO3	Students will be able to Write and execute Android based program different layouts structures with		
CO4	Students will be able to write and run the Android program having multiple activities.		
CO5	Students will be able to design the innovative solution for real world problem.		
CO6	Students will be able to create a small android application		

Course:	ASP.NET using C# MCA Semster-V	Course Code:	T1-IT51
CO1	Student will be able to solve the problems using c# language constructs.		
CO2	Students will be able to apply the concepts of different server controls, validation controls and		
CO3	Students will be able to understand, analyze and build dynamic web pages using server-side		
CO4	Students will be able to create the web services and apply it to the web applications.		
CO5	Students will be able to understand and apply the concepts of error pages and security of web		
CO6	Students will be able to create the web based applications using Ajax Controls tools.		
CO7	To develop skills require to create server-side application using ASP.NET MVC framework.		

Course:	Service Oriented Architecture MCA Semester-V	Course Code:	T1-IT52
CO1	Students will be able to gain understanding of the basic principles of service orientation concepts and		
CO2	Students will be able to learn service oriented analysis techniques.		
CO3	Students will be able to learn technology underlying the service design.		
CO4	Students will be able to learn advanced concepts such as service composition, orchestration and		
CO5	Students will be able to know about various Web Service specification standards.		
CO6	Students will be able to develop Applications using various WSDL and client.		
CO7	Students will be able to create a Securing web services, Policy and SOAP messaging.		

Course:	Software Project Management	Course Code:	ITC51
CO1	Students will be able to learn the process of Software Project Management.		
CO2	Students will be able to apply the cost estimation techniques to solve the real world problems.		
CO3	Students will be able to undersand and evaluate the process of Risk Manageent associated wih the		
CO4	Students will be able to confugure the projects based on various parameters.		
CO5	Students will be able to design and control the quality parameters related to the software projects.		
CO6	Students will be able explore the different tools of software project management.		
CO7	Students will be able to apply the concepts of Team Management to solve the real world problems		

