

## Pratibha Institute of Business Management, Chinchwad, Pune-19

### PEO, PO, CO (MCA) based on 2012-2013 pattern

The basic objective of the education of the **Masters programme in Computer Application (M.C.A)** is to provide to the country a steady stream of the necessary knowledge, skills and foundation for acquiring a wide range of rewarding careers into the rapidly expanding world of the Information Technology.

**Programme Objectives (PO)** - Programme Outcomes are narrower statements that describe what students are expected to know and be able to do upon graduation.

These relate to the skills, knowledge, and behaviour that students acquire in their matriculation through the programme.

**Course Outcomes (COs)** - Course Outcomes are narrower statements that describe what students are expected to know, and be able to do at the end of each course.

These relate to the skills, knowledge, and behaviour that students acquire in their matriculation through the course.

#### Programme Specific Objective

1) Should be able to successfully contribute in Information Technology Industry playing different roles on various technologies

2) Should be able to adapt changes and learn newly Technologies in Information Technology Industry

3) Should be able to grow and excel in Information Technology Industry

4) On gaining experience, Individual should be able to lead teams, mentor and guide inexperienced and budding professionals

#### Program Objectives (PO)

1) **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.

2) **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.

3) **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.

4) **Life Long learning** - Recognise the need, and have the ability, to engage in independent learning for continual development as a computing professional.

5) **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.

6) **Individual and Team Working** - Function effectively as an individual and as a member or leader in diverse teams and in multidisciplinary environments.

7) **Professional Ethics** - Understand and commit to professional ethics and cyber regulations, responsibilities, and norms of professional computing practices.

8) **Multi-Disciplinary Ability** : - Demonstrate knowledge and ability to work in different domains and disciplines including non-development / operational IT work

## Pratibha Institute of Business Management, Chinchwad, Pune-19

### CO for Semester - I, based on 2012-2013 pattern

Course Code	Course Name	Course Objective
IT11	Computer Organization	- Provide basic knowledge of Computer System, its components and their organization. - Introduce to the basic data representation in the computer.
IT12	C Programming	- Provide knowledge of basic Programming Concepts, Develop Programming Logic, use of Programming Instructions, Syntax and Program Structure. - Create foundation to learn other complex programming languages like C++, Java etc. - Should be able to develop C programs
IT13	Software Engineering	- Provide fundamental knowledge of Software Analysis and Design, Development Life Cycle - To provide understanding of different CASE tools and current trends in Software Engineering

BM11	Principles and Practices of Management and Organizational Behavior	- Provide knowledge on basic management concepts and use of management principles in the organization.
BM12	Business Process Domains with Cost and Financial Accounting	-To provide knowledge of the processes and practices in business and their applications -To introduce advance business applications like CRM and SCM. -To provide knowledge on the financial aspect of business and management to enable student in understanding and analyzing financial statements of a business.
MT11	Discrete Mathematics	- Provide knowledge of Logic, Relations and Functions, Algebraic Functions and Graph Theory.
IT11P	Mini Project using C	-Provide hands on practice of developing C and inculcate good programming skills.
SS1L	Softskill - Word Power, Business English	- To provide knowledge on the vocabulary of English, increase/improve comfort ability with business English. - To help improve understanding of language (hearing practice) and reading.
BM12L	Business Process Domains with Cost and Financial Accounting - Lab	- To get handson experience of various business domains and be able To think from designing Information Systems - To provide knowledge of standart business processes and End To End journies through available tools

**Pratibha Institute of Business Management, Chinchwad, Pune-19**  
**CO for Semester - II, based on 2012-2013 pattern**

Course Code	Course Name	Course Objective
IT21	Object Oriented Programming with C++	- To provide knowledge of Object Oriented programming concepts - To provide knowledge on C++ programming concepts - To be able to code and provide solutions using C++ programming language
IT22	Database Management System	- The provide knowledge related to database, database models, SQL and database operations. - Creates a strong foundation for application database design.
IT23	Operating System Concepts	-Provide knowledge of fundamentals of Operating systems - Provide knowledge on management of key computing resources like CPU, Memory, Storage, Process Synchronization and Deadlocks
BM21	Management Information System and BI	-To provide knowledge of Management Information Systems, there need and purpose
IT24	Enterprise Resource Planning	-To provide knowledge of ERP systems its structure, modules, benefits, implementation and post implementation issues through real-life cases
BM22	Softskills	-To develop and nurture the soft skills that help develop student as a team member, leader, and all round professional in long run. -To provide knowledge of Softskills like Written, Oral communication, Time Management, Meditation, Introspection
IT21L	Mini Project using C++	- To Provide hands-on platform for developing programs using C++ language. - C++ Programming should cover concepts on Class, Inheritance, Abstraction, Encapsulation, dynamic binding, polymorphism, I/O systems, exception handling - Develop Problem Solving ability and built a knowledge on referring online forums, documentations of OEMs to resolve Programming related problems
IT22L	Mini Project based on RDBMS concepts	Will enhance database handling, data manipulation and data processing skills through SQL & PL/SQL, which will help students in developing data centric computer applications.
SS2L	Soft Skill - Group Discussion	- Should be able to communicate within the group - Contribute in Group discussions -Drive discussions, focus on the objective and outcome of the discussion and achieve those

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### CO for Semester - III, based on 2012-2013 pattern

Course Code	Course Name	Course Objective
IT31	Web Technologies	<ul style="list-style-type: none"> <li>- Enables students to understand web page site planning, management and maintenance</li> <li>- Explains the concepts of developing advanced HTML pages with the help of frames, scripting languages, and evolving technologies &amp; scripting like DHTML, jQuery, AJAX and XML.</li> </ul>
IT32	Data Communication and Computer Networks	To provide knowledge on various computer networks, technologies behind networks and application protocols, e-mail and communication protocols along with introduction to advance network technologies like LTE, Cloud computing, Grid computing will be introduced to the students through this subject.
IT33	Data Structure using C++	The basic algorithms related to handling data like stack, lists, queue, trees and graphs are introduced in this subject. The implementation of these algorithms will be taught using C++ programming language.
IT34	Advanced Database Management System	To gain an knowledge of the issues in objected oriented data models, learn about the Web-DBMS integration technology and XML for Internet database applications, familiarize with the data-warehousing and data-mining techniques and other advanced topics.
IT35	Object Oriented Analysis and Design	<ul style="list-style-type: none"> <li>- Should understand the issues involved in implementing an object-oriented design. Should acquire knowledge in analyzing requirements and produce an initial design</li> <li>- Should be able to develop a design to the point where it is ready for implementation, should be able to design components to maximize their reuse.</li> <li>- Learn to use the essential modeling elements in the most recent release of the Unified Modeling Language - UML 2.0</li> </ul>
MT31	Research Methodology and tools	<p>To provide knowledge and understanding that Research is a tool which helps the manager to identify, understand and solve management problems.</p> <ul style="list-style-type: none"> <li>- Research improves the decision making ability of the manager.</li> <li>- To create understanding and develop scientific attitude towards solving a management problem</li> <li>- Impart knowledge about tools available for carrying out research.</li> </ul>
IT31P	Mini Project based on Web Technologies	<ul style="list-style-type: none"> <li>- To make practice of developing a good web application using the techniques and scripting students have learnt, they have to do a mini project as an assignment.</li> <li>- Students are expected to develop dynamic web projects, based on HTML, DHTML, JavaScript / VBScript and ASP.</li> </ul>
IT31L	Mini Project based on Data Structure concept	The practical implementation of data structure will be done by students through this lab work, which will built efficient programming skills in students.
SS3L	Soft Skill - Technical Writing	- To be able To write technical documents like Requirement Specification, Process documents, Plans, Business Cases, Case Study

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### CO for Semester - IV, based on 2012-2013 pattern

Course Code	Course Name	Course Objective
IT41	Java Programming	- To enable the students to understand the core principles of the Java Language and use visual tools to produce well designed, effective applications and applets.
IT42	Mobile Computing	- To introduce network, system, techniques and applications in Mobile Wireless Computing.
IT43	Information Security and Audit	-To create awareness about the values of Information and how the Information security practices are meticulously implemented in IT companies worldwide.
IT44	Design and Analysis of Algorithm	- To understand and learn advance algorithms and methods used in computer science to create strong logic and problem solving approach in student
MT41	Optimization Technique	- To introduce the linear programming and related optimization theories to solve real life /simulated problems.
BME41	Business Scenario - Elective (Social Networking)	-All elective subject will be self learning oriented. Student should practice use of self learning resource by means of e-learning material, internet, field survey, library, on-line journals etc for gaining expertise in the subject. College should conduct expert lectures in form of workshops and

		seminars for these subjects.
IT41L	Java Lab	- This project work will provide hands on practice to student to enhance their Java Programming Skills. Java concepts such as Interfaces, Packages, Exception Handling, Applet, multithreading, Abstract Windows Toolkit, Java Input Output, Networking, JDBC, RMI, Java Beans should be included.
IT41P	Mini Project using Mobile Computing	- To be able to do develop Website using XHTML, ChTML - To be able to setup WAP2 between Access point and Laptop - To be able to use Bluetooth link between Laptop and Mobile Phone, File Transfer, Application Install, -To be able to do Security Setting - To be able to develop Mobile Device Simulator and to be able to do Mobile Handset Programming - To be able to Design of Touch Screen User Interface
SS4L	Soft Skill - Presentation Skill	- To be able to use tools like Powerpoint ' To be able to prepare convincing and articulative presentations ' To be able to present and put across ones views to audience and address queries, concerns raisedby audience
BME41L	Business Scenario - Elective Lab	-All elective subject will be self learning oriented. Student should practice use of self learning resource by means of e-learning material, internet, field survey, library, on-line journals etc for gaining expertise in the subject. College should conduct expert lectures in form of workshops and seminars for these subjects.

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### CO for Semester - V, based on 2012-2013 pattern

Course Code	Course Name	Course Objective
IT51	Software Testing and Quality Assurance	- To enable student to learn Software Testing and Quality Assurance good practices with the help of various software testing techniques, Strategies, tools and case studies.
IT52	Software Project Management	-To learn process of software project management, cost estimation, use of project management tools, configuration management, user roles and software teams.
IT53	Emerging Trends in Information Technology	To make students aware with the changes in technologies, applications and systems around us.
IT54	Advanced Development Technology	- To teach student application development technology currently available. Prefer .NET Framework 4.0 and Visual Studio 2010
IT55	Advanced Internet Technology	- To provide extension to web development skills acquired in 3rd semester. Struts, Servlets, Java Beans, JSP and PHP are introduced for student to enhance their skills.
ITE51	Advanced Technology - Elective	All elective subject will be self learning oriented. Student should practice use of self learning resource by means of e-learning material, internet, field survey, library, on-line journals etc for gaining expertise in the subject. College should conduct expert lectures in form of workshops and seminars for these subjects
IT51P	Mini project using AIT and ADT	<ul style="list-style-type: none"> <li>➤ The objective of this mini project is to gear up student for preparation of final project in Semester VI.</li> <li>➤ Student will select individually Commercial or Technical project based on Application Development Technologies learnt in Semester IV.</li> <li>➤ Each student will have to prepare proper documentation consisting of SRS, Modeling Techniques, Development Strategies and Implementation and Testing Strategies. Student may use any Design Methodologies such as SSAD, OOAD and UML etc. This is a documentation project only.</li> <li>➤ The project work will be presented by student using Power Point Presentation Tool to the panel of internal teachers appointed by the Director of the concerned Institute/College.</li> <li>➤ The Institute may appoint external expert from industry or academics if it feels so. The students will be assessed internally by such panel for this project.</li> </ul>
IT51L	Case Tool Lab	To make student accustom with various automated tools used for Software Design and Development, Testing, Project Management etc.

SS5L	Soft Skill - Interview Skill	- To provide confidence and ability to face Interviews - To build further softskills acquired and be able to communicate, present, articulate in a positive mindframe with positive body language
ITE51L	Advance Technology - Elective Lab	All elective subject will be self learning oriented. Student should practice use of self learning resource by means of e-learning material, internet, field survey, library, on-line journals etc for gaining expertise in the subject. College should conduct expert lectures in form of workshops and seminars for these subjects

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**CO for Semester - VI, based on 2012-2013 pattern**

Course Code	Course Name	Course Objective
IT61P	Project	-To enable students to experience the full life cycle project preferably in professional environment -To provide hands on experience on different phases like Req. Capture, Design, Construct and test -To provide exposure in dealing with user community (Requirements Generators) -To provide experience of delivering application to the satisfaction on customer

**Pratibha Institute of Business Management, Chinchwad, Pune-19**  
**PO CO mapping based on 2012-2013 pattern**

Course Code	Course Title	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
IT11	Computer Organization	Y							
IT12	C Programming	Y	Y						
IT13	Software Engineering	Y	Y						
BM11	Principles and Practices of Management and Organizational Behavior					Y	Y	Y	Y
BM12	Business Process Domains with Cost and Financial Accounting					Y	Y		Y
MT11	Discrete Mathematics	Y							
IT11P	Mini Project using C	Y	Y	Y	Y				
SS1L	Softskill - Word Power, Business English						Y	Y	
BM12L	Business Process Domains with Cost and Financial Accounting - Lab					Y	Y		Y
IT21	Object Oriented Programming with C++	Y	Y	Y					
IT22	Database Management System	Y	Y		Y				
IT23	Operating System Concepts	Y	Y		Y				
BM21	Management Information System and BI	Y	Y	Y	Y	Y			
IT24	Enterprise Resource Planning	Y	Y		Y				
BM22	Softskills						Y	Y	
IT21L	Mini Project using C++	Y	Y		Y				
IT22L	Mini Project based on RDBMS concepts	Y	Y		Y				
SS2L	Soft Skill - Group Discussion						Y	Y	
IT31	Web Technologies	Y	Y	Y	Y				
IT32	Data Communication and Computer Networks	Y	Y		Y				

IT33	Data Structure using C++	Y	Y	Y					
IT34	Advanced Database Management System	Y	Y	Y	Y				
IT35	Object Oriented Analysis and Design	Y	Y		Y				
MT31	Research Methodology and tools					Y	Y		
IT31P	Mini Project based on Web Technologies	Y	Y		Y				
IT31L	Mini Project based on Data Structure concept	Y	Y		Y				
SS3L	Soft Skill - Technical Writing	Y	Y				Y	Y	Y
IT41	Java Programming	Y	Y	Y	Y				
IT42	Mobile Computing	Y	Y	Y	Y				
IT43	Information Security and Audit						Y	Y	
IT44	Design and Analysis of Algorithm	Y	Y						
MT41	Optimization Technique	Y							
BME41	Business Scenario - Elective (Social Networking)				Y				
IT41L	Java Lab	Y	Y		Y				
IT41P	Mini Project using Mobile Computing	Y	Y		Y				
SS4L	Soft Skill - Presentation Skill						Y	Y	
BME41L	Business Scenario - Elective Lab								
IT51	Software Testing and Quality Assurance		Y	Y	Y				
IT52	Software Project Management					Y	Y	Y	
IT53	Emerging Trends in Information Technology				Y				
IT54	Advanced Development Technology	Y	Y	Y	Y				
IT55	Advanced Internet Technology	Y	Y	Y	Y				
ITE51	Advanced Technology - Elective	Y	Y	Y					
IT51P	Mini project using AIT and ADT	Y	Y	Y	Y				
IT51L	Case Tool Lab			Y					
SS5L	Soft Skill - Interview Skill						Y	Y	
ITE51L	Advance Technology - Elective Lab	Y	Y	Y	Y				
IT61P	Project	Y	Y				Y	Y	Y