

University of Pune

M.C.A. (Under Commerce Faculty) (To be implemented from Academic year 2013-2014)

Credit Based System

1. Programme Name

Master Degree in Computer Application (M.C.A.)

2. Preamble

The M.C.A program is a combination of computer-related and general commerce courses. The computer related courses are used to introduce techniques of programming , databases, web designing, system analysis and design tools. The commerce courses include the education of Human recourse development, Organizations, accounting, inventory and production. The course is designed to emphasis on the building of business application software . The students are exposed to Software Engineering concepts, MIS and DSS for different organizations.

3. Objective

3.1. The basic objective of the M.C.A (Commerce) is to provide knowledge and skills required for planning, designing and build Complex Application Software Systems as well as to provide support to automated systems or application.

4. Programme Structure

4.1.Duration

The entire Programme is of a Three year (Six semester) full time Program.

4.2.Courses

First Five semesters will have Seven courses each. The entire period of the sixth semester shall be devoted for the Major project work. Two kinds of courses offered are Core courses and Elective courses. Core courses are offered by the department conducting the programme. Elective courses are offered either by the department conducting the programme or by any other department.

5. Eligibility

For First Year : Bachelors Degree in any discipline of Pune University or any other degree of other University / Institution recognized by Pune University as equivalent .

For Lateral Entry (Second Year) : B.C.A. , B.Sc(IT) , B.Sc(cs) , B.C.S.

As Per the rules laid down by AICTE for the admission to MCA (Management)i.e. (Direct Access to 2nd Year MCA), the same should be applied for the students who have cleared BCA, BSc(IT), BSc (CS), BCS from recognized university and should have direct access to Second Year MCA (Commerce).

6. Medium of Instruction

Medium of Instruction will be English.

7. Award of Credits

7.1. Each course will be of 4 credits.

7.2. Semester I to Semester V is of 7 courses and 28 credits and Semester VI is of Industrial training which will carry 16 credits .

7.3. Students will get 4 credits after successful completion of any course.

8. Evaluation Pattern

8.1. Each course will carry 100 marks.

8.2. There will be Continuous Assessment(CA) and University Evaluation(UE) mechanism for each course and carry 50 marks each.

8.3. 50 marks of the course towards CA will be based on tests (minimum 2). In addition, a teacher may consider one or more of the following evaluation systems as CA.

- a. Home Assignment(s)
- b. Seminar/Presentation by the student
- c. Lab assignment

8.4. The assessment of 16 credits towards VIth semester (Full Time Industrial Training / Institutional project) will be carried out as follows:

- a. A student will inform the department about the joining date of the above mentioned training.
- b. The student will have to make minimum two presentations, one in the third month and the other at the end of the training programme. These presentations will be considered towards CA.
- c. The student will have to submit a Dissertation/Report to the department which will be assessed as University Evaluation.

8.5. Industrial Training Project viva-voce will be conducted by University panel of Three Experts.

8.6. In the event of failure in Project Work the candidate shall re-register for project work, redo the project work and resubmit the project report afresh for evaluation. The Continuous Assessment marks shall be freshly allotted in this case.

8.7. If a student fails in a course of any semester then the student can appear only for the End of Semester Examination of the following semester. However he/she can improve the continuous assessment (CA) performance in any of the forthcoming semesters in which the course is subsequently conducted and in this case, the student will have to appear for End of Semester Examination also for the said course.

9. Question Paper Pattern

9.1 Theory paper-

- Question 1. 14Marks
- Question 2. 12 Marks
- Question 3. 12 Marks
- Question 4. 12 Marks

9.2 Practical Paper-

- Question 1. 10 Marks
- Question 2 15 Marks
- Question 3. 20 Marks
- Viva 05Marks

*Each question may contain sub divisions also. University authorities may change these patterns as and when needed.

10. ATKT Rules

10.1. Each regular student will have to appear for all the 28 credits of the respective semester.

10.2. Student can appear for maximum 32 credits in 3rd , 4th and Maximum 36 credits in 5th semester .

10.3. Student who wishes to take admission to the Second year M.C.A should have obtained at least 36 credits out of 56 credits of the First year M.C.A.

10.4. Student who wishes to take admission to the Third year M.C.A should have passed First year M.C.A.

11. Completion of Degree Programme

- 1.1. As soon as a student obtains 156 credits, the student will be deemed to have completed the requirements of the M.C.A..(Commerce) degree programme.
- 1.2. If a student has failed in a course then the said course will not be taken into account for calculating GPA and overall grade. In fact, all the courses in which a student has passed will be taken into account for calculating the GPA and overall grade.
- 1.3. The policies and procedures determined by University will be followed for the conduct of examinations and declaration of the result of a candidate

Year/ Semester	Subject	Paper	Title of Paper	Hours / Week	Credit	Marks		
						CA	UE	Total
I Year Sem-I	Core	CAC-101	Fundamentals of Information Technology	4	4	50	50	100
	Core	CAC-102	Programming in C	4	4	50	50	100
	Core	CAC-103	Elements of Statistics	4	4	50	50	100
	Core	CAC-104	Financial Accounting	4	4	50	50	100
	Core	CAC-105	Principles of Management	4	4	50	50	100
	Core	CAC-106	Business Communication	4	4	50	50	100
	Core	CAC-107	Lab on CAC-101 &102	4	4	50	50	100

Minimum Credit : 28, Core Subject is compulsory CA- Continuous Assessment, UE –University Examination.

Year/ Semester	Subject	Paper	Title of Paper	Hours / Week	Credit	Marks		
						CA	UE	Total
I Year Sem-II	Core	CAC-201	Data Structures	4	4	50	50	100
	Core	CAC-202	OOP- C++	4	4	50	50	100
	Core	CAC-203	Elements of Mathematics	4	4	50	50	100
	Core	CAC-204	System Analysis and Design	4	4	50	50	100
	Core	CAC-205	Database Management System	4	4	50	50	100
	Core	CAC-206	Human Resource Management	4	4	50	50	100
	Core	CAC-207	Lab. on CAC-201,CAC-202	4	4	50	50	100

Minimum Credit : 28 , Core Subject is compulsory. CA- Continuous Assessment, UE – University Examination.

Year/ Semester	Subject	Paper	Title of Paper	Hours / Week	Credit	Mark		
						CA	UE	Total
II Year Sem-III	Core	CAC-301	Java	4	4	50	50	100
	Core	CAC-302	Advance Database Concepts	4	4	50	50	100
	Core	CAC-303	Object Oriented Software Engineering	4	4	50	50	100
	Core	CAC-304	Network Operations	4	4	50	50	100
	Core	CAC-305	Lab. on 301 & 302	4	4	50	50	100
	Elective	CAC-306	Introduction to Operating Systems	4	4	50	50	100
	Elective	CAC-307	M-Commerce	4	4	50	50	100
	Elective	CAC-308	Management Information Systems	4	4	50	50	100
	Elective	CAC-309	Project	4	4	50	50	100

Minimum Credit : 28 , Maximum Credit 32 . Core Subject is compulsory, From elective courses student can select Two course for Minimum credit and Three for Maximum Credit. CA- Continuous Assessment, UE –University Examination.

Year/ Semester	Subject	Paper	Title of Paper	Hours / Week	Credit	Mark		
						CA	UE	Total
II Year Sem-IV	Core	CAC-401	Advance Java	4	4	50	50	100
	Core	CAC-402	Visual Programming	4	4	50	50	100
	Core	CAC-403	Distributed Databases	4	4	50	50	100
	Core	CAC-404	Web Technology	4	4	50	50	100
	Core	CAC-405	Lab. on 401,402	4	4	50	50	100
	Elective	CAC-406	IT Project Management	4	4	50	50	100
	Elective	CAC-407	Cyber Law and IT Security	4	4	50	50	100
	Elective	CAC-408	Advanced Networking	4	4	50	50	100
	Elective	CAC-409	Project	4	4	50	50	100

Minimum Credit : 28 , Maximum Credit 32 . Core Subject is compulsory, From elective courses student can select Two course for Minimum credit and Four for Maximum Credit. CA- Continuous Assessment, UE –University Examination.

Year/ Semester	Subject	Paper	Title of Paper	Hours / Week	Credit	Mark		
						CA	UE	Total
II IYear Sem-V	Core	CAC-501	Advanced Web Programming	4	4	50	50	100
	Core	CAC-502	Data Center Technology	4	4	50	50	100
	Core	CAC-503	Information System Audit	4	4	50	50	100
	Core	CAC-504	Content Management Systems	4	4	50	50	100
	Core	CAC-505	Lab. on CAC-501,CAC-502	4	5	50	50	100
	Elective	CAC-	Mobile Communication	4	4	50	50	100

	e	506						
	Elective	CAC-507	System Simulation and Modeling	4	4	50	50	100
	Elective	CAC-508	Businesses and Professional Skills	4	4	50	50	100
	Elective	CAC-509	Project	4	4	50	50	100

Minimum Credit : 28 , Maximum Credit 32 . Core Subject is compulsory, From elective courses student can select one course for Minimum credit and Three for Maximum Credit. IA- Internal Assessment, UE –University Examination.

Year/ Semester	Subject	Paper	Title of Paper	Hours / Week	Credit	Marks		
						CA	UE	Total
III Year Sem-VI	Core	CAC-601	Industrial Training /Institutional project	--	16	100	200	300

M.C.A. (Commerce) Part I, Semester II
Subject Name -: Data Structure Using C
Course Code -: 201

Unit No.	Topic	Reference Books	Peroids
1.	1. Introduction to Data Structure 1.1 Definition of Data structure 1.2 Common Operation on Data Structure 1.3 Abstract Data Types (ADT) and advantages of ADT 1.4 Types of Data structure	1,2	2
2.	2. Algorithm Analysis 2.1 Definition of Algorithm 2.2 Characteristic 2.3 Complexities Space Complexity Time Complexity 2.4 Asymptotic Notation Big O Omega Theta	1,3	2
3.	3. Arrays 3.1 Introduction to Array 3.1.1 Definition 3.1.2 Types of Arrays 3.1.3 Initialization and operation on one and two Dimensional array 3.2 Representation of array 3.3 Address calculation in array 3.4 Sparse Matrix	2,3	4
4.	4. Sorting and Searching Techniques 4.1 Bubble Sort 4.2 Insertion Sort 4.3 Selection Sort 4.4 Quick Sort 4.5 Radix Sort 4.6 Merge Sort 4.7 Analysis of all Sorting Techniques 4.8 Linear Search 4.9 Binary Search(Recursive , Non-Recursive)	3	9

5.	5. Linked List 5.1 Introduction 5.2 Static & Dynamic Representation 5.3 Types of linked List 5.3.1 Singly Linked list 5.3.2 Doubly Linked list (Creation, Printing) 5.3.3 Circularly Singly Linked list (Creation, Printing) 5.3.4 Circularly Doubly Linked list (Creation, Printing) 5.4 Operation for all types of Linked List Creation, Insertion (Begin, Middle, End), Deletion(Begin, Middle, End), Printing, Traversing. 5.6 Generalized Linked List	1,3	10
	6. Stack 6.1 Introduction 6.1.1 Static and Dynamic Representation 6.1.2 Primitive Operations on stack 6.1.3 Application of Stack 6.2 Evaluation of postfix and prefix expression 6.3 Conversion of expressions- Infix to prefix & postfix, postfix to infix & prefix, Prefix to infix & postfix	1,3	5
7	7. Queue 7.1 Introduction 7.1.1 Static and Dynamic Representation 7.1.2 Primitive Operations on Queue 7.1.3 Application of Queue 7.2 Type of Queue 7.2.1 Circular Queue 7.2.2 DeQueue 7.2.3 Priority Queue	1,3,4,5	5
8	8. Trees 8.1 Introduction 8.1.1 Definitions 8.1.2 Terminology 8.1.3 Static and Dynamic Representation 8.2 Types of tree 8.3 Operations on Binary Tree & Binary Search Tree- Create, Insert, Delete, Count(leaf, non-leaf & total nodes) 8.4 Tree Traversal Inorder, Preorder, Postorder (Recursive & Iterative)	1,3	7

	8.5 Applications of Tree 8.5.1 Heap 8.5.2 AVL / Height Balanced tree		
9	9. Graphs 9.1 Introduction 9.1.1 Definitions 9.1.2 Terminology 9.2 Representation of Graph 9.2.1 Adjacency Matrix 9.2.2 Adjacency List 9.3 Graph Traversals 9.3.1 DFS, 9.3.2 BFS 9.4 Spanning Tree 9.4.1 Finding shortest path (Dijkstra's Algorithm) 9.4.2 Finding critical path	1	6
10	10. Hashing (No Program) 10.1 Hashing Basic Concept 10.1.1 Hash Table 10.1.2 Hash Function 10.1.3 Overflow Handling	1	1

Recommended Books	
<ol style="list-style-type: none"> 1. Fundamentals of data structures – Ellis Horowitz and Sartaj Sahni 2. Data Structure Using C - Radhakrishanan and Shrivastav. 3. Data Structure Using C and C++ - Rajesh K. Shukla ,Wiley -India 4. Data Structures Files and Algorithms – Abhay K. Abhyankar 5. Data Structures and Algorithms – Alfred V. Aho, John E. Hopcroft, Jeffrey D. Ullman (Pearson Education) 	

M.C.A. (Commerce) Part I, Semester II
Subject Name -: Object Oriented Programming Using C++
Course Code -: 202

Unit No.	Topic	Reference Books	Peroids
1.	1. Structured Programming with C++ 1.5 Introduction 1.6 Procedure Oriented & Object Oriented Programming 1.7 Concepts, Features ,Advantages and Applications of OOPs	1	2
2.	2. Exploring the Basic Components of C++ 2.1 Introduction 2.2 Tokens, keywords, Identifiers and constants 2.3 Basic data types 2.4 User defined data types 2.5 Derived data types – Array, Pointer, function 2.6 Symbolic constant 2.7 Type Compatibility 2.8 Declaration of variables 2.9 Dynamic initialization of variable 2.10 Reference variable 2.11 Operator in C++ 2.12 Scope resolution operator 2.13 Member Referencing operators 2.14 Memory management operators 2.15 Manipulators 2.16 Type cast operators 2.17 Expression and their types 2.18 Special Assignment Expressions 2.19 Implicit conversions 2.20 Operator overloading 2.21 Operator precedence 2.22 Control structures – if-else, do-while, for , Switch	1,3	6
3.	3. Functions in C++ 3.1 What is a function 3.2 Declaring and Defining Functions 3.3 Function Parameters 3.4 Call by reference 3.5 Return by reference 3.6 Call by value	1,3	3

	3.7 Inline function 3.8 Default arguments 3.9 Function overloading		
4.	4. Object Oriented Programming Using C++ 4.1 Working with classes and Objects 4.1.1 Defining a class 4.1.2 Creating an Object, data members 4.1.3 Using Access Specifiers 4.1.4 Creating member function 4.1.5 Defining member functions (inside & outside) 4.2 Making outside function inline 4.3 Nesting of Member functions 4.4 Private member functions 4.5 Arrays within a class 4.6 Memory allocation for objects 4.7 Static Data Members and Member Functions 4.8 Array of Objects 4.9 Object as function Arguments 4.10 Friend Functions 4.11 Returning Objects	1	5
5.	5. Working with Constructors and Destructors 5.1 Constructor 5.1.1 Introduction 5.1.2 Types of Constructor 5.2 Destructor	1,2	4
6.	6. Operator Overloading 6.1 Definition 6.2 Overloading unary and binary operators using member function and Friend Function 6.3 Manipulation of String using operators Overloading insertion and extraction operators	1,2	5
7	7. Inheritance 7.1 Definition 7.2 Types of Inheritance 7.3 Making Private member inheritable 7.4 Virtual base class 7.5 Abstract class 7.6 Constructors in Derived Classes	1,2	6
8	8. Pointers, Virtual functions and Polymorphism 8.1 Pointers	1,2	4

	8.2 Pointers to Objects 8.3 this pointer 8.4 Pointers to derived classes 8.5 Virtual functions 8.6 Pure virtual functions		
9	9. Managing console I/O operations 9.1 C++ stream classes 9.2 Unformatted I/O operations 9.3 Formatted Console I/O operations 9.4 Managing Output with Manipulators	1	4
10	10. Files 10.1 File Operations 10.2 Detecting end of file 10.3 File modes 10.4 File pointers and their manipulation 10.5 File Updation with random access 10.6 Error handling during File Operations	1	5
11	11. Templates 11.1 Defining templates 11.2 Class and Function templates 11.3 Class and Function templates with multiple parameters 11.4 Overloading of function templates 12. 11.5 Member function templates	1	4

Recommended Books
1. Programming With C++ - By . E. Balaguruswamy 2. Complete Reference - By Robert Lofore 3. Object Oriented Programming in C++ - Dr. G.T.Thampi, Dr. S.S.Mantha ,dreamtech press 4. Sams Teach yourself C++ in 24 Hours , Pearson

M.C.A. (Commerce) Part I, Semester II
Subject Name :- ELEMENTS OF MATHEMATICS
Course Code :- 203

Time : 4 hours/week
Course credit : 4 Points
Continuous Assessment : 50 Marks
University Examination: 50 Marks
Total marks : 100 Marks

OBJECTIVES:

- 1.To train the students with mathematical foundations.
- 2.To give a feel of core mathematics required in many subjects of computer applications.

Unit-I: Set Theory

[8 Lectures]

Sets, Subsets, power set, Operations on Sets, De Morgan's Laws, Venn diagrams, Cartesian Product of two set, Equivalence relation, equivalence class, Transitive closure and Warshall's algorithm, Partition of a Set, Partial order on a set, Mathematical Induction , Principle of Inclusion and Exclusion.

UNIT-II: Relations and Functions

[8 Lectures]

Ordered Pairs, Cartesian product of Sets, Relations, types of relations, equivalence relations, Partial Ordering, Equivalence Class, Properties of Equivalence Class, Function , Definition of function as relation, Injective, Surjective function , Bijective function, Composition of two functions, Inverse Function.

UNIT-III: Mathematical Logic

[5 Lectures]

Propositions, Logical Connectives and compound , Propositions, Truth Tables, Logical Equivalence, Algebra of Propositions, Tautology and contradiction, Conditional Propositions and its Converse, Contra positive and Inverse of , Tautologies, Contradictions and Contingency, arguments, validity of arguments, Methods of Proof.

UNIT-IV: Theory of matrices

[6 Lectures]

Definition of matrix, types of matrices, Matrix arithmetic, Transpose and powers of matrices, Symmetric matrix, Concept of Partition of a Matrix, Inverse of a matrix, Sparse matrices, Solving system of linear equations using Gaussian elimination and Cramer's rule.

UNIT-V: Graphs

[10 Lectures]

Introduction of graph, simple and multi graph, regular and complete graph , matrix representation of graphs, Isomorphism, subgraph, paths, circuits , connected and disconnected graphs, shortest path algorithm- Dijkstra's , Euler and Hamiltonian graph.

UNIT-VI :Tree and Directed Graph

[10 Lectures]

Introduction of tree,centre of a tree ,spanning tree,shortest spanning tree and Kruskal's algorithm.Directed graph,symmetric and asymmetric directed graphs ,strongly and weakly connected directed graph. arborescence

Reference Books

1. Graph theory with applications to Engineering and computer science by Narsingh Deo.
2. Discrete mathematical structure: Kolman B. Busby R.C. Ross S.C. prentice – Hall of India (P) Ltd.
3. Graph theory by John Clark and Derek Allan Holton
4. Discrete mathematics: Olympia Nicodimi CBS – publishers and distributors Delhi.
5. Discrete Mathematical structures with applications of computer science :Tremblay J.P. and Manohar R.
6. Elements of Discrete Mathematics : C.L.Liu , Tata Mcgraw Hill publishing company Ltd. New Delhi.
7. Combinatorics- Allan Tucker
8. Discrete Mathematics its application's –Kenneth H. Rosen. Tata Mcgraw Hill publishing company Ltd. Sixth edn. New Delhi.
9. Applied Discrete Structures for Computer Scienc- Alan Doerr, Galgotia Publications.

M.C.A. (Commerce) Part I, Semester II
Subject Name -: System Analysis and Design
Course Code -: 204

Chapter No.	Topics	Book reference	No. of lectures
1	Ch 1 : System Concepts 1.1 Introduction to system 1.2 Characteristics of system 1.3 System elements 1.4 Types of System 1.5 Categories of information	2,3	4
2	Ch 2 : Process Models 2.1 SDLC 2.2 Waterfall Model 2.3 Prototyping Model 2.4 Spiral Model 2.5 RAD Model 2.6 4GL	2,3	10
3	Ch 3 : System Analysis Tools and Techniques 3.1 System Analysis 3.2 System Analyst & its role 3.3 Requirement Anticipation and User transaction requirements 3.4 Feasibility Study 3.5 Fact Finding Techniques	2,3	8
4	Ch 4 : System Design Tools and Techniques 4.1 Decision Tree 4.2 Decision Table 4.3 ER Diagram 4.4 DFD 4.5 Data dictionary 4.6 Pseudo code 4.7 Input & Output Design 4.8 Case Study	1,2,3	10
5	Ch 5 : System Testing and Quality Assurance 5.1 definition 5.2 Testing Principles and Objectives. 5.3 Testing Process	2,4	6

	5.4 Types of Testing 5.5 McCall's Quality factors 5.6 Test data Generators		
6	Ch 6 :System Implementation 6.1 Implementation Approaches 6.1.1. Incremental 6.1.2. Traditional. 6.2 Implementation Steps 6.3 Post Implementation review	1,2,4	6
7	Ch 7 : System Maintenance 7.1 Types of Maintenance 7.2 Side effects of Maintenance 7.3 Reverse Engineering 7.4 Re-engineering	1,2,4	6
8	Ch 8: Agile technology 8.1 Limitations of SDLC. 8.2 What Is Agile Process?. 8.3 Politics Of Agile Development. 8.4 Human Factors.	4	3

Reference Books :

1. System analysis and Design (SADSE) – Parthsarty, Khalkar
2. System analysis and Design – Elias Awad
3. System analysis and Design of Information system- James Senn
4. Software engineering – Roger Pressman

M.C.A. (Commerce) Part I, Semester II
Subject Name -: Database Management System
Course Code -: 205

Sr. No.	Chapter No.	Name of Chapter and Contents	No. of Lect.	Reference
1	1	Introduction to Database Systems 1.1 Data 1.2 Information 1.3 Data Verses Information 1.4 Data Warehouse 1.5 Data Dictionary 1.6 Data Items or fields 1.7 Records and Files 1.8 Database 1.9 Database System Applications 1.10 Purpose of database Systems 1.11 View of data 1.12 Database Languages 1.13 Data Model 1.14 Database architecture 1.15 Relational Model 1.15.1 Fundamental Relational Algebra operation 1.15.2 Additional Relational Algebra Operation	8	1,2
2	2	SQL and Advanced SQL 2.1 Background 2.2 Basic structure of SQL queries 2.3 Set operations 2.4 Aggregate Functions 2.5 Null values 2.6 Nested sub-queries 2.7 Complex queries 2.8 Views 2.9 Integrity constraints 2.10 Authorization	12	3
3	3	Database and Relational Database Design 3.1 Overview of the design process 3.2 Constraints 3.3 Entity relationship model 3.4 Entity relationship diagrams 3.5 Entity relationship design issues 3.6 Weak Entity sets	12	1

		3.7 Strong Entity sets 3.8 Extended E-R features 3.9 Features of good Relational Database Design 3.10 Anomalies of Un normalized Database 3.11 Normalization 1 NF 2 NF 3 NF BCNF 3.12 Functional Dependency 3.13 Decomposition using functional dependencies		
4	4	Transaction Management 4.1 Transaction concept 4.2 Transaction state 4.3 Transaction properties 4.4 Concurrent Execution 4.5 Serializability 4.6 Testing for Serializability 4.7 Recoverability	6	1,2
5	5	Concurrency Control and Recovery System 5.1 Lock based protocols 5.2 Timestamp based protocols 5.3 Multiple Granularity 5.4 Validation based protocols 5.5 Deadlock Prevention 5.6 Deadlock Handling 5.7 Deadlock Recovery 5.8 Failure Classification 5.9 Storage Structure 5.10 Recovery and Atomicity 5.11 Log based Recovery 5.12 Recovery with Concurrent Transaction	11	1,2

Recommended Books:

1. Database System Concepts :- Silberschatz , Korth , Tata McGraw-Hill Publication
2. Database Management System :-Raghu Ramkrishnan, Tata McGraw-Hill Publication
3. SQL, PL/SQL The Programming Language Oracle :- Ivan Bayross, BPB Publication.
4. Database Systems Concepts , Designs and Application by Shio Kumar Singh , Pearson
5. Introduction to SQL by Reck F. van der Lans by Pearson
6. Modern Database Management by Jeffery A Hoffer , V.Ramesh, Heikki Topi , Pearson
7. Database Management Systems by Debabrata Sahoo ,Tata Macgraw Hill

M.C.A. (Commerce) Part I, Semester II
Subject Name -: Human Resource Management
Course Code -: 206

Chapter no.	Topic	No. of lectures
1	Introduction of HRM Definition & concept of HRM Difference between HRM & personnel management Importance , Function, limitation of HRM Challenges of HRM HRD - Meaning, definition, scope, importance	08
2	Human Resources Planning Definition, objective & process of HRP Factor influencing estimation of Human Resource, Human Resource Information System Job analysis -concept ,purpose, steps in job analysis, method	08
3	Recruitment & selection Concept, goal, sources, alternatives of recruitment. selection -concept, selection process ,limitation of selection process, transfer policy	08
4	Training & development Meaning, definition, need, objective, importance of training, training method Employee development-concept, method Organization development- process, methods International training & development issue	08
5	Performance appraisal Concept, objective, process, uses & limitation Performance management system-concept, purpose, challenges of Performance management system	08
6	Labour union& Collective bargaining Concept of union, reasons of joining union, union organizing process, critical issue for union today's scenario meaning,objective,scope,process of collective bargaining	08
	Total period	48

Reference books-

1. David A.Decenzo & Stephen P. Robbins- Human Resource Management , Wiley India
2. Sharad D.Geet & Mrs Asmita A. Deshpande- Human Resource Management
3. A. M. Sharma - Personnel and Human Resource Management.
4. S. K. Bhatia - Personnel Management and Nirmal Sing - Human Resource Management.
5. Human Resource Management & Human Relations
6. P. C. Pardeshi - Human Resource Management.
7. C. B. Mamoria - Personnel Management