



Course: MCA

Semester: 4

Prerequisite: NIL

Rationale: Student will be assessed on the basis of various courses learned till the end of respective semester.

Teaching and Examination Scheme

Teaching Scheme					Examination Scheme					Total
Lecture Hrs/Week	Tutorial Hrs/Week	Lab Hrs/Week	Hrs/	Credit	Internal Marks			External Marks		
					T	CE	P	T	P	
3	0	0	-	3	-	20	20	-	60	100

SEE - Semester End Examination, CIA - Continuous Internal Assessment (It consists of Assignments/Seminars/Presentations/MCQ Tests, etc.)

Course Content

W - Weightage (%) , T - Teaching hours

Sr.	Topics	W	T
1	Fundamentals of Computer Organization Number systems, Boolean algebra, Flip-Flop, Adders, RAM, ROM, Cache memory, Buses.	10	4
2	Fundamentals of Programming Decision & control structure, Looping, Arrays, Functions, Pass by value, Pass by pointer, Pointers, Structure, Union, File handling.	10	5
3	Fundamentals of Internet and Web Designing HTML tags, Linking documents, Frames, Media elements, Image maps, CSS styles, Java script.	10	4
4	Discussion & Q/A		
5	Object Oriented Concepts and Programming Object Oriented Programming concepts, Functions, Constructor and destructor, Operator overloading, Inheritance, Runtime polymorphism, Exception handling, IO operations.	10	4
6	Operating Systems Operating System concept, Process Management and threads, Memory Management, Inter-process communication and synchronization, I/O and file system, Disk scheduling.	10	5
7	Java Programming Inheritance, Sub classing, Package, Exception, Collection frameworks – ArrayList, Vector, Set, Map, I/O and Multi threading.	10	4
8	Discussion & Q/A		
9	Software Engineering Software process, Requirements engineering, Data dictionary, Class diagram, Usecase diagram, Activity diagram, Sequence diagram.	10	5
10	Advanced Database Management Systems Object relational database, Extended relational database, PL/SQL, Cursor, Trigger, Stored procedure, Database tuning, indexing and security, Backup and recovery in database, Granting and revoking privileges.	10	5
11	Open Source Technology using PHP Open source software and configuration, PHP structure and syntax, Session and cookies, MySQL with PHP, working with User data and Error handling.	10	4
12	Analysis and Design of Algorithm Algorithm analysis, Time and Space complexity, Divide and conquer algorithms, Graph searching and traversal, Branch and bound, Dynamic programming, Backtracking, Asymptotic notations.	10	5
13	Discussion & Q/A		

Reference Books



1.	Structured Computer Organization By A. Tanenbaum Prentice - Hall of India Pvt. Ltd 4th Edition
2.	Computer Architecture and Logic Design By Thomas C. Bartee Tata McGraw - Hill Edition, 2010
3.	Programming with problem solving through 'C' By ELSEVIER
4.	Programming in C By E. Balagurusamy Tata McGraw-Hill
5.	HTML & CSS: The Complete Reference By Thomas A. Powell McGraw Hill
6.	Web Enabled Commercial Application Development using HTML, JavaScript, DHTML and PHP By Ivan Bayross BPB Publication
7.	Database System Concepts By Silberschatz, Korth, Sudarshan McGraw Hill Publication 4th Edition
8.	Database Systems, Concepts, Design and Applications By S K Singh Pearson Edition
9.	An Introduction to Data Structures with Applications By Jean-Paul Tremblay, Paul G. Sorenson Tata McGraw-Hill 2nd Edition, (2007)
10.	Introduction to Algorithm By Cormen, Leiserson, Rivest, Stein PHI (2003) 2nd Edition
11.	C++: The Complete Reference By Herbert Schildt McGraw Hill 5th Edition
12.	Programming with ANSI C++ By Bhushan Trivedi Oxford University Press Second Edition
13.	Operating System Concepts By Abraham Silberschatz Wiley Fifth
14.	Operating Systems Internals and Design Principles By William Stallings PHI 5th Edition
15.	Analysis and Design of Information system By James Senn Mc Graw Hill
16.	System Analysis and Design By S. Parthasarthy & B. W. Khalkar Master Ed. Cons., Nashik. 1st Edition
17.	The Complete Reference Java J2SE By Herbert Schildt TMH Publishing Company Ltd, NewDelhi. 5th Edition
18.	Core Java Volume 1 By Cay Horstmann and Gary Cornell Pearson Education 8th Edition
19.	Software Engineering : A Practitioner's Approach By Pressman R.S TMH
20.	Software Engineering By Sommerville Pearson 8th
21.	SQL, PL/SQL – The Programming Language By Ivan Bayross BPB Publications
22.	Database System Concepts By Abraham Silberschatz, Henry Korth, S. Sudarshan McGraw Hill International 6th Edition
23.	Professional LAMP: Linux, Apache, MySQL and PHP5 Web Development By Jason Gerner, Morgan Owens, Elizabeth Naramore, Matt Warden WROX publication
24.	Sams Teach Yourself PHP, MySQL and Apache All in One By Julie C Meloni Pearson Education
25.	Analysis and Design of Algorithm By Ullman TMH



26.	Introduction to the Design & Analysis of Algorithms By Goodman TMH
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Course Outcome

After Learning the Course the students shall be able to:

1. review and summarize various subjects studied till the end of respective semester.

Miscellaneous

Useful Links

https://sites.google.com/a/paruluniversity.ac.in/pu_mca_ca/