

Scheme of Examination
(FOR THE CANDIDATES ADMITTED FROM THE ACADEMIC
YEAR 2017 ONWARDS)

Course Code	Course Title	Lecture+ tutorial/ practical	Duration of Exam Hrs	Marks			Credit Points
				Internal	End of Semeste	Total	
	Semester I						
17PMC101	Fundamentals of Programming languages and C	4	3	25	75	100	4
17PMC102	Data and File Structures	4	3	25	75	100	4
17PMC103	Digital Electronics and Computer System Architecture	4	3	25	75	100	4
17PMC104	Computer Oriented Numerical Methods	4	3	25	75	100	4
17PMC105	Internet and Web Designing	4	3	25	75	100	4
17PMC106	LAB-I C Programming	5	3	40	60	100	2
17PMC107	LAB-II Internet and Web Designing Lab	5	3	40	60	100	2
Semester Total				205	495	700	24
	Semester II						
17PMC208	Object Oriented Programming with C++	4	3	25	75	100	4
17PMC209	Relational Database Management system	4	3	25	75	100	4
17PMC210	Accounting and Financial Management	4	3	25	75	100	4

	SEMESTER-IV						
Subject Code	Subject Title	Lecture+ tutorial/ practical	Duration of Exam Hrs	Marks			Credit Points
				Internal	End of Semester	Total	
17PMC424	J2EE Technologies	4	3	25	75	100	4
17PMC425	Computer Networks	4	3	25	75	100	4
17PMC426	PHP and MYSQL	4	3	25	75	100	4
17PMC427	Elective – I Information Security	4	3	25	75	100	4
17PMC428	Elective – II Software Testing	4	3	25	75	100	4
17PMC429	Programming Lab – VIII J2EE Lab	5	3	40	60	100	2
17PMC430	Programming Lab –IX PHP and MYSQL Lab	5	3	40	60	100	2
17PMC431	Mini Project - II			20	30	50	2
Semester Total				225	525	750	26

	SEMESTER-V						
Course Code	Course Title	Lecture+ tutorial/ practical	Duration of Exam Hrs	Marks			Credit Points
				Internal	End of Semester	Total	
17PMC532	Unix Programming	4	3	25	75	100	4
17PMC533	Data Mining and Warehousing	4	3	25	75	100	4
17PMC534	Web Programming	4	3	25	75	100	4
17PMC535	Elective – III Python Programming	4	3	25	75	100	4
17PMC536	Programming Lab – X Unix	4	3	40	60	100	2
	Programming Lab						

17PMC537	Programming Lab – XI Web Programming Lab	4	3	40	60	100	2
17PMC538	Programming Lab – XII Python Programming	2	3	40	60	100	1
Semester Total				220	480	700	21

SEMESTER-VI							
Course Code	Course Title	Lecture+ tutorial/	Duration of Exam Hrs	Marks			Credit Points
				Internal	End of Semester	Total	
17PMC639	Big Data Management	4	3	25	75	100	4
17PMC640	Elective IV - Android Programming	4	3	25	75	100	4
17PMC641	Project and Viva Voce			40	160	200	10
Semester Total				90	310	400	18
Grand Total				1210	2890	4100	140

Credits

4 Theory Hours = 4 Credits

5/4 Lab Hours = 2 Credits

3/2 Lab Hours = 1 Credit

Bloom's Taxonomy Based Assessment Pattern

K1-Remember ; **K2**- Understanding ; **K3**- Apply ; **K4**-Analyze ; **K5**- Evaluate

1. Theory: 75 Marks

(i) TEST- I & II and ESE:

Knowledge Level	Section	Marks	Description	Total
K1	A(Answer all)	10x1=10	MCQ/Define	75
K2	B (Either or pattern)	5x5=25	Short Answers	
K3& K4	C(Answer 4 out of 6)	4x10=40	Descriptive/ Detailed	

2. Theory: 50 Marks

Knowledge Level	Section	Marks	Description	Total
K1	A(Answer all)	10x1=10	MCQ/Define	50
K2	B (Either or pattern)	5 x 3=15	Short Answers	
K3& K4	C(Answer 5 out of 7)	5 x 5 =25	Descriptive/ Detailed	

3. Practical Examinations:

Knowledge Level	Section	Marks	Total
K3	Practicals & Record work	60	100
K4		40	
K5			

Components of Continuous Assessment

Components		Calculation	CIA Total
Test 1	75	$\frac{75+75+25}{3}$	25
Test 2	75		
Assignment/Seminar	25		

Programme Outcomes

PO1.

To prepare students to face the industry/ academia/technical profession with confidence

PO2.

To provide students with solid foundation in mathematical and computing fundamentals and techniques required to solve related problems and also to pursue higher studies and research and to train students with good computing breadth so as to comprehend, analyze, design and create computing solutions for the real life problems

Programme Specific Outcomes

PSO1 Graduates will acquire knowledge of basic mathematics, computing fundamentals, programming concepts and other core computer subjects.

PSO2 Graduates will have an ability to identify, formulate and implement computing solutions.

PSO3 Graduates will have an ability to design and conduct experiments, analyze and interpret data.

PSO4 Graduates will be able to design a system, component or process as per needs and specification.

PSO5 Graduates will demonstrate effects of computing solutions on the society.

Semester I

Programme code:	MCA	Programme Title :	Master of Computer Applications	
Course Code:	17PMC101	Title	Batch :	2017
		Fundamentals of Programming Languages and C	Semester	I
Hrs/Week:	4		Credits:	04

Course Objective

- The goal is to develop a clear, consistent and unambiguous standard for the C programming language which codifies the common, existing definition of C and which promotes the portability of user programs across C language environments

Course Outcomes (CO)

K1	CO1	To understand the programming Constructs of C
K2	CO2	To Design and develop programs using program control structures, functions, Structures, Unions, files and pointers
K3	CO3	Deploy the functional constructs, structures, union, files and pointer concepts
K4	CO4	Analyze and apply C programming to extract solutions to the problem domain

Existing Syllabus

Unit-1

Concepts of Programming : Introduction- Steps in developing a program – **Software Design Techniques :** Top-down design approach, bottom-up design approach- **Programming Methodologies:** stepwise refinement, modularity – Pseudo code – classification of programming languages – generation of Programming Languages

Unit-2

An Overview of C – History of C- Importance of C Basic Structure of C programs – Character Set – Data types and Sizes – Variables – constants – Operators – Expressions – Type conversion – Storage Classes – Program Control Structures – Loop Control Structures – C Formatted Input/output – Arrays – Strings – String handling function

Unit-3

Functions – Need of user Defined functions- passing values between function- function declaration and prototypes – call by value and call by reference – category of functions – recursion – nesting of functions – Functions with Arrays

Structures – uses of structures – array of structures – Array within Structures – Structures within Structures – unions – user defined type declarations : type definition, enumerated data type

Unit-4

Pointers – Introduction – understanding pointers – accessing the address of a variable – declaring and initializing pointers – accessing a variable through its pointer – pointer expressions – pointer increments and scale factor

Pointer and Arrays – Pointers and Strings – Pointers and Functions – Pointer and Structures

Unit-5

File Processing – Introduction- Definition and opening a file – closing a file – I/O operations in files – error handling during I/O operations – Random access to files- command line Arguments

Dynamic Memory Allocation – C Preprocessors – Macro Substitution – File inclusion- Compiler Directives.

Books for Study:

- Sudharsan.P, (2004) “ *Fundamentals of Computing* “, I Edition, RBA publications (Unit I).
- Yashavant P. Kanetkar (2010),“*Let us C*”, 12th Edition, BPB Publicaions, (Unit II , III, IV).
- Balagurusamy .E,(2004) “ *Programming in ANSI C*”, Third Edition , ,McGraw-Hill Publications (Unit IV,V).

Books for Reference:

- Yeswanth Kanetkar,(2003) “*Pointers in C* ”, 3rd Edition, BPB Publicaions.
- Bryon.S. Gottfried, (2009)“*Programming with C*”, Schaum’s Outlines, Second

Mapping

PSO CO	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	H	H	M	H	S
CO2	M	L	H	M	H
CO3	L	S	H	S	M
CO4	M	H	S	L	H

S- Strong; H-High; M-Medium; L-Low

Course Designed by	Verified by HoD	Checked by	Approved by
Name and Signature	Name and Signature	CDC	COE
Name: S.Niraimathi	Name: M.Rajasenathipathi	Name:	Name:
Signature:	Signature:	Signature:	Signature:

Programme code:	MCA	Programme Title :	Master of Computer Applications	
Course Code:	17PMC102	Title	Batch :	2017
		DATA AND FILE STRUCTURES	Semester	I
Hrs/Week:	4		Credits:	04

Course Objective

- This syllabus provides the import knowledge on various data structure concepts

Course Outcomes (CO)

K1	CO1	To remember the importance of Algorithms and Data structure concept
K2	CO2	To understand the Algorithms and Data structures used for solving a problem are much more important than knowing the exact code for it in some programming language.
K3	CO3	To apply an insight into the intrinsic nature of the problem as well as possible solution techniques, independent of programming language or any other implementation technique.
K4	CO4	To Analyze the Algorithms and Data structures in productive programmer

Existing Syllabus

Unit-1

Introduction – Overview – types of data – How to create programs – how to analyze programs – arrays – representation of arrays – ordered list- stacks – definitions and concepts – operations on stack – application of stack – recursion – evaluation of expressions

Unit-2

Sparse Matrices – Queue – its definition – simple queue – linked linear lists – circularly linked lists – doubly linked lists – application of linked lists – polynomial manipulation

Unit-3

Sorting – Selection sort – Quick sort – Bubble sort – merge sort – radix sort – heap sort – Searching – Sequential Search – Binary Search.

Symbol Tables – Static tree tables – Dynamic tree tables – hash tables

Unit-4

Tree – Basic Terminology – Binary tree – Representation – Binary Tree traversal – more on binary tree – representation of tree. Graphs – Terminology and termination – introduction – Definitions and Terminology – Graph representations – traversals, connected components and spanning trees

Unit-5

Sequential files – the structures of sequential files – indexed sequential file – its structure – processing indexed sequential files – direct files – structure of direct files- processing direct files

Books for Study:

- Ellis Horowitz & Sarataj Sahni (1981), “ *Fundamentals of data structures*”, Ninth Edition, Galgotia Publications.
- Trembly Sorenson (1984), “ *An Introduction to data structures with applications*”, Second edition, McGraw-Hill Publications.

Books for Reference:

- Robert L.Kruse(1984) , “*Data Structures and Program Design*”, Second Edition, Prentice Hall Publications.
- Dromey.R.G ,(2008) “*How to Solve it by computer* ”, Fourth Edition, Pearson Education, India Larry L.Peterson & Bruce S.Davie, (2000) “*Computer Networks – A Systems Approach*”, 2nd edition , Harcourt Asia/Morgan Kaufmann,.
- William Stallings(1997), “*Data and Computer Communications*”, 5th edition, PHI publications.
- P.Green, (1982), “*Computer Network Architecture and protocols*”, 1st edition, Plenum Press

Mapping

PSO CO	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	H	S	M	S	S
CO2	S	M	H	H	H
CO3	M	S	L	M	M
CO4	M	H	H	L	H

S- Strong; H-High; M-Medium; L-Low

Course Designed by	Verified by HoD	Checked by	Approved by
Name and Signature	Name and Signature	CDC	COE
Name:Dr.B.Azhagusundari	Name: Dr.M.Rajasenathipathi	Name:	Name:
Signature:	Signature:	Signature:	Signature:

Programme code:	MCA	Programme Title :	Master of Computer Application	
Course Code:	17PMC103	Title	Batch :	2017
		Digital Electronics and Computer System Architecture	Semester	I
Hrs/Week:	4		Credits:	4

Course Objective

- The purpose of this syllabus is to make the student to understand the fundamental principles of digital electronics and computer architecture.
- This will make the student to aware about the digital components of the computer hardware

Course Outcomes (CO)

K1	CO1	To remember the concept of machine languages and number system
K2	CO2	To get the idea of logical circuits and boolean equation
K3	CO3	To understand the structure and function of system architecture
K4	CO4	To apply with the real world problems

Existing Syllabus

Unit-1

Number systems: Complements – Binary codes – error detection code.

Digital Circuits: Logic gates (AND, OR, NOT, NAND, NOR, XOR) – Demorgan's Theorem – Map Simplification Combinational Circuits : Half adder – Full adder – Decoder- Encoder – Multiplexer – Demultiplexer

Unit-2

Sequential Circuits: Flip flops – RS – D – JK – JK Master/slave – Edge Triggered – Registers : SISO – SIPO- PIPO – Counters: Binary- UP-Down counter – Ring Counter

Unit-3

Central Processing Unit : General Register organization – Stack Organization – Instruction formats – Addressing modes – Data Transfer and manipulation instruction – Program control.

Arithmetic Processor Design: Addition and Subtraction- Division and Multiplication algorithms

Unit-4

I/O Organization: Peripheral Devices – I/O Interface – Asynchronous data transfer – mode of transfer – priority interrupt – direct Memory Access – I/O processor

Unit-5

Memory Organization : Memory Hierarchy – Main memory – Auxiliary memory – Associative memory

Books for Study:

- Albert Paul Malvino(1991), , Donald P Leach, “Digital Principles and Applications”, Fourth Edition. Tata McGraw Hill.
- Morris Mano(2008), “*Computer System Architecture*”, Third Edition, Pearson India.

Books for Reference:

- V.C Hamachar, Z.G. Vraesic, S.G. Zaky,(2010), “*Computer Organization*”, Fifth Edition, Tata McGraw Hill.
- Vincent P.Heuring, Harry F.Jordan,(2008) “*Computer Systems Design and Architecture*”, Second Edition, Addison Wesley,
- John p. Hayes(1999), “*Computer Architecture and Organization*”, Third Edition, McGraw Hill.
- David A. Patterson and John L.Hennessy(1999), “*Computer Organization and Design*”, Second edition, Harcourt Asia Pvt Ltd.
- William Stallings (2007), “*Computer organization and Architecture – Designing for performance*”, Sixth Edition, Pearson Education,

Mapping

PSO CO	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	H	S	M	H	S
CO2	H	M	H	S	H
CO3	M	S	S	M	M
CO4	M	H	H	L	H

S-Strong; H-High; M-Medium; L-Low

Course Designed by	Verified by HOD	Checked by	Approved by
Name and Signature	Name and Signature	CDC	COE
Name: Dr. E. Rama Devi Signature:	Name: Dr. M. Rajasenathipathi Signature:	Name: Signature:	Name: Signature:

Programme code:	MCA	Programme Title :	Master of Computer Applications	
Course Code:	17PMC104	Title	Batch :	2017
		Computer Oriented Numerical	Semester	I
Hrs/Week:	4	Methods	Credits:	04

Course Objective

- With the present development of the computer technology, it is necessary to develop efficient algorithms for solving problems in Science, Engineering and Technology.
- This course gives a complete procedure for solving different kinds of problems that occur in engineering numerically.
- At the end of the course the students would be acquainted with the basic concepts in numerical methods and their uses.

Course Outcomes (CO)

K1	CO1	To remember the importance of numerical algebra and equations
K2	CO2	To understand the concept of differential equations
K3	CO3	Apply numerical method techniques to find the solution of ordinary differential equations.
K4	CO4	To Analyze the differential equations with different programming languages

Existing Syllabus

Unit-1

The Solution of Numerical Algebraic and Transcendental Equations : The Bisection Method – Iteration Method – Regula Falsi Method – Newton Raphson method

Unit-2

Solution of Simultaneous Linear Algebraic Equations (Direct) – Gauss Elimination Method – Gauss Jordan Elimination Method – Gauss Jacobi method – Gauss Seidel method

Unit-3

Interpolation : Newton's forward Interpolation formula – Newton's backward Interpolation formula – Gauss's forward Interpolation formula – Gauss's backward Interpolation formula – Stirling's formula – Bessel's formula – Lagrange's interpolation formula for unequal intervals.

Unit-4

Numerical Differentiation and Integration : Newton's forward difference formula to get the derivative – Newton's backward difference formula to compute the derivative – derivative using Stirling's formula.

Numerical Integration : Trapezoidal rule – Simpson's one-third rule – Simpson's three-eighths rule.

Unit-5

Numerical Solution of Ordinary Differential Equations : Solution by Taylor series – Improved Euler method – Modified Euler method – Runge Kutta Method – Predictor Corrector methods : Milne's Predictor Corrector Formulae

Books for Study:

- Dr.P.Kandasamy, Dr.K.Thilagavathy, Dr.K.Gunavathi (2010), "*Numerical Methods*", First Edition, S.Chand Publishing.

Books for Reference:

- E.Balagurusamy, (1999), "*Numerical Methods*", First Edition, Tata McGraw-Hill Pub.Co.Ltd., New Delhi.
- Burden, R.L and Faires T.D. (2002), "*Numerical Analysis*", Seventh Edition, Thomson Asia P.Ltd., Singapore.

Mapping

CO \ PSO	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	H	S	M	M	S
CO2	S	S	H	H	H
CO3	M	L	S	M	L
CO4	M	H	H	L	H

S- Strong; H-High; M-Medium; L-Low

Course Designed by	Verified by HoD	Checked by	Approved by
Name and Signature	Name and Signature	CDC	COE
Name: Dr. B. Azhagusundari	Name: Dr. M. Rajasenathipathi	Name:	Name:
Signature:	Signature:	Signature:	Signature:

Programme code:	MCA	Programme Title :	Master of Computer Applications	
Course Code:	17PMC105	Title	Batch :	2017
		Internet and WEB Designing	Semester	II
Hrs/Week:	4		Credits:	4

Course Objective

- This course enables students to understand about the internet, web page site planning, Management and Maintenance.
- The course explains the concepts of developing advanced HTML pages with the help of frames, scripting languages and evolving technologies like DHTML and XML

Course Outcomes (CO)

K1	CO1	To recollect the concept of Internet
K2	CO2	To understand the importance of Internet and web designing
K3	CO3	To implement the concept using HTML
K4	CO4	To analyze and write the programs

Existing Syllabus

Unit-1

Introduction: What is Internet ? History of internet- Internet services and Accessibility – Uses of the internet – protocols – web concepts – Internet Standards

Unit-2

Internet Protocols: Introduction – Internet protocols – Host Names – Internet Applications and Application protocols, Datagram Vs Stream, Trivial File Transfer protocol. FTP – File transfer protocol, Telnet, HTTP, Email Protocols, SMTP, POP, IMAP

Unit-3

HTML : Introduction - SGML – Outline of an HTML Document – Head Section – Body Section – HTML forms

Unit-4

Dynamic HTML (DHTML) : Introduction – Cascading Style Sheets(CSS) DHTML – Event Handling – Filters and Transitions – Data Binding

Unit-5

Extensible Mark-up Language (XML) : Introduction – HTML vs XML – Syntax of the XML Document- XML Attributes – XML Validation – XML DTD – The building Blocks of XML Documents – DTD Elements – DTD Attributes – DTD Entities – DTD Validation – XSL – XSL Transformations – XML Namespaces – XML Schema

Books for Study:

N.P. Gopalan, J.Akilandeswari,(2011), '*Web Technology- A developers Perspective*', *Second Edition*, PHI Learning Private Limited.

Books for Reference:

1. Thomas A.Powell '*The Complete Reference HTML*' , 5th Edition, Tata McGraw Hill.
2. Thomas A.Powell '*The Complete Reference Internet*' , 2nd Edition, Tata McGraw Hill.

Mapping

PSO CO	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	H	H	H	H	S
CO2	H	M	H	M	H
CO3	M	M	S	H	M
CO4	M	H	H	M	H

S-Strong; H-High; M-Medium; L-Low

Course Designed by	Verified by HoD	Checked by	Approved by
Name and Signature	Name and Signature	CDC	COE
Name: Dr. M. Rajasenathipathi Signature:	Name: Dr. M. Rajasenathipathi Signature:	Name: Signature:	Name: Signature:

Programme code:	MCA	Programme Title :	Master of Computer Applications	
Course Code:	17PMC106	Title	Batch :	2017
		Programming Lab - I	Semester	I
Hrs/Week:	5	Programming in C	Credits:	02

Course Objective

- The purpose of this course is to introduce to students to the field of programming using C language. The students will be able to enhance their analyzing and problem solving skills and use the same for writing programs in C.

Course Outcomes (CO)

K1	CO1	To understand the basics of C Programming
K2	CO2	Know concepts in problem solving□
K3	CO3	To do programming in C language
K4	CO4	To write diversified solutions using C language

Program 1	Programs using Control Structures
Program 2	Programs using Arrays
Program 3	Matrix Operations using Arrays
Program 4	Using String Applications in a Program
Program 5	Programs using Functional concepts
Program 6	Programs using Recursion
Program 7	Using Structures & Union
Program 8	Programs using Pointers
Program 9	Linked Lists Programs
Program 10	Stack & Queue Programs
Program 11	Programs using Searching Techniques
Program 12	Programs using Sorting Techniques

Program 13	File Operations in different applications
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Mapping

PSO CO	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	S	S	M	H	S
CO2	H	M	H	L	H
CO3	L	L	L	M	L
CO4	M	L	H	S	H

S- Strong; H-High; M-Medium; L-Low

Course Designed by	Verified by HoD	Checked by	Approved by
Name and Signature	Name and Signature	CDC	COE
Name: S.Niraimathi	Name: M.Rajasenathipathi	Name:	Name:
Signature:	Signature:	Signature:	Signature:

Programme code:	MCA	Programme Title :	Master of Computer Applications	
Course Code:	17PMC107	Title	Batch :	2017
		Programming Lab – II Internet and WEB Designing LAB	Semester	I
Hrs/Week:	4		Credits:	2

Course Objective

- To understand the practical knowledge of Internet Program
- Enable the students to write and execute the program
- Simple projects using HTML

Course Outcomes (CO)

K3	CO1	To remember and recollect the concept of Internet
K4	CO2	To get the idea of java syntax and its structure
K5	CO3	To validate the projects using HTML

Program 1	Designing 25 to 30 different colors using table frame and color code
Program 2	Prepare a Time table for five hours in a week
Program 3	Prepare a resume using physical character formatting, elements, frame, target etc.,
Program 4	Designing an advertisement for two wheeler like bike, scooter etc., using bg color, image links etc
Program 5	Design as advertisement for four wheeler like car using bg color, image, link etc.,
Program 6	Design an advertisement for hospital using bg color, image , link etc.
Program 7	Design a website for college it includes logo, caption, course details etc.,
Program 8	Prepare student mark sheet for 5 student using External Style Sheet

Program 9	Display Source program information on the same window using frame (Addition of any three numbers)
Program 10	Display letters from A to H and produce the corresponding word and image using frame
Program 11	Prepare a website for library management system
Program 12	Prepare a website for library management system payroll system
Program 13	Using XML, Design a web page for five operating system with main function using font Style, Size, bg color (XML Style sheet link)
Program 14	Design a web page for configuration of three computers using XML

Mapping

PSO CO	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	M	H	M	H	S
CO2	H	M	M	M	H
CO3	H	M	M	H	M
CO4	M	H	H	H	M

S-Strong; H-High; M-Medium; L-Low

Course Designed by	Verified by HoD	Checked by	Approved by
Name and Signature	Name and Signature	CDC	COE
Name: M. Rajasenathipathi	Name: Dr. M. Rajasenathipathi	Name:	Name:
Signature:	Signature:	Signature:	Signature:

Semester II

Programme code:	MCA	Programme Title :	Master of Applications	
Course Code:	17PMC208	Title	Batch :	2017
		Object Oriented Programming with C++	Semester	I
Hrs/Week:	4		Credits:	4

Course Objective

- The purpose of this syllabus is to use C++ as a tool for programming using Object oriented concept.
- The students learn the basic concepts of object oriented programming, structure and programming constructs of C++, to identify objects, relationships and communication among objects, to implement inheritance and polymorphism to design and use programs with STLs

Course Outcomes (CO)

K1	CO1	To remember the concept of object oriented programming
K2	CO2	To get the idea of programming constructs
K3	CO3	To understand the programming skills
K4	CO4	Writing the programs for various applications

Existing Syllabus

Unit-1

Object Oriented Programming–Difference Between Traditional Approach and OOPS - Need of OOPS–Objects–Classes–Data Abstraction–Data Encapsulation–Inheritance–Polymorphism–Dynamic Binding–Message Passing–Benefits of OOPS–Application of OOPS.

Unit-2

Application of C++ - Structure of C++ Program–Tokens–Expressions–Basic Data Types–User Defined Data Types–Derived Data Types–Symbolic Constants–Declaring Variables–Reference

Variables-Operators in C++-Scope Resolution Operators-Manipulators-Type cast Operators-Expression and their types-Special assignment Expression-Implicit Conversions-Control Structures-Function in C++ -Function Prototyping-Call by Reference-Return by Reference-Inline Functions-Default Arguments-Const Arguments-Classes and Objects-Defining Member Functions-Static Data member and Member Functions.

Unit-3

Array of Objects-Object as function argument -Friend function-Returning objects-Const Member Function-Pointer to Member-Constructor-Parameterized constructor-Multiple Constructor in a Class-Constructor with Default Arguments-Copy Constructor-Dynamic Constructor-Destructor-Operator overloading and Type Conversions-Rules of Operator Overloading.

Unit-4

Inheritance-Defining Derived classes-Single Inheritance-Making a Private Member Inheritable-Multiple Inheritance-Multilevel Inheritance-Hierarchy Inheritance-Hybrid Inheritance-Pointers, Virtual functions and Polymorphism

Unit-5

Managing Console Operations-C++ Streams-Stream classes-Unformatted, Formatted I/O Operations-Managing output with manipulators-Opening and Closing a file-Detecting end of file-File Modes-File pointer and their manipulations-Sequential IO operations- Error Handling during File Operations-Command Line Arguments-Introduction of templates.

Books for Study:

- Balagurusamy. E (2013) , “*Object Oriented Programming with C++*”, Sixth edition, Tata McGraw-Hill Publications
- BruceEckel (2000) , “*Thinking in C++* “, Second Edition, Prentice Hall

Books for Reference:

- HerbertSchild,(1995) : “*C++ The Complete Reference*”, Third Edition, Osborn McGraw- Hill Publications

Mapping

PSO CO	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	H	M	M	H	S
CO2	H	H	H	S	H
CO3	H	S	S	M	M
CO4	M	H	H	M	H

S-Strong; H-High; M-Medium; L-Low

Course Designed by	Verified by HoD	Checked by	Approved by
Name and Signature	Name and Signature	CDC	COE
Name: Dr. E. Rama Devi Signature:	Name: Dr. M. Rajasenathipathi Signature:	Name: Signature:	Name: Signature:

Programme code:	MCA	Programme Title :	Master of Computer Applications	
Course Code:	17PMC209	Title	Batch :	2017
		Relational Database Management System	Semester	I
Hrs/Week:	4		Credits:	04

Course Objective

- Understand fundamental database concepts and the different database systems.
- Understand methodologies to conceptualize and design database systems.
- Identify the key issues in developing database systems and applications.
- Develop applications involving database systems, in particular Web-based applications, and commercial RDBMS such as MySQL, Oracle, SQL Server and Access.

Course Outcomes (CO)

K1	CO1	To remember the fundamentals of data models to conceptualize and depict a database system
K2	CO2	To understand the relational database implementation using SQL with relational database design concepts.
K3	CO3	To apply the internal storage structures using different file and indexing techniques
K4	CO4	To Analyze the database design procedure for large enterprise database design

Existing Syllabus

Unit-1

Overview of database systems: Managing data – A historical perspective file systems versus a DBMS – Advantages of a DBMS – Describing and storing data in a DBMS – Queries in a DBMS – Transaction management – Structure of a DBMS.

Database design & ER diagrams – Entities attributes and entity sets – Relationships and Relationship sets – Additional features of the ER model – conceptual database design with the ER model.

Unit-2

Relational Model: Integrity constraints over relations – Enforcing integrity constraints – Querying relational data – Logical database design; ER to relational introduction to views – Destroying / Altering Tables & Views.

Relational algebra and calculus: Relational Algebra – Relational Calculus.

Unit-3

SQL: Queries, Programming Triggers: The form of a basic SQL Query – UNION, INTERSECT and EXCEPT – Nested Queries – Aggregate operators – Null values – Complex integrity constraints in SQL – Triggers & Active data bases.

Transaction Management Overview: The ACID properties – Transactions & Schedules – Concurrent execution of transactions – Lock-based concurrency control – performance of locking – Transaction support in SQL.

Unit-4

Schema Refinement and normal forms: Introduction to schema refinement – Functional dependencies – Reasoning about functional dependencies – Normal forms – Properties of Decompositions – Normalization – Schema refinement in data base design – Other kinds of dependencies.

Security: Introduction to database security – Access control – Discretionary access control – Mandatory access control – Additional issues to security.

Concurrency control: 2PL, serializability and Recoverability – Introduction to lock Management – Lock conversions – Specialized Locking techniques- Concurrency control without locking.

Unit-5

Parallel & Distributed databases: Introduction – Architecture for parallel databases – Parallel Query evaluation – Parallelizing individual operations – Parallel query optimization – Introduction to distributed databases – Distributed DBMS architecture storing data in a distributed DBMS. **Object Database Systems:** Motivation Example – Structured data types –

Operation on structured data types – Encapsulation & ADTS – Inheritance – Objects, OIDS and reference Types – Database design for and ORDBMS – OODBMS – comparing RDBMS OODBMS and ORDBMS.

Books for Study:

- Raghu Ramakrishnan, Johannes Gehrke (2002), “*Database Management Systems*”, Third edition, McGraw-Hill Higher Education.

Books for Reference:

- Silberschatry, Korth, Sundarshan (2010), “*Database System Concepts*”, Sixth Edition, McGraw-Hill Higher Education.
- Elmasri Navathe, (2007), “*Fundamentals of Database Systems*”, Fifth Edition, Pearson Education Asia.

Mapping

CO \ PSO	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	M	S	M	M	S
CO2	S	M	H	S	H
CO3	M	L	S	M	S
CO4	M	H	H	L	H

S- Strong; H-High; M-Medium; L-Low

Course Designed by	Verified by HoD	Checked by	Approved by
Name and Signature	Name and Signature	CDC	COE
Name: Dr. B. Azhagusundari	Name: Dr. M. Rajasenathipathi	Name:	Name:
Signature:	Signature:	Signature:	Signature:

Programme code:	MCA	Programme Title :	Master of Computer Applications	
Course Code:	17PMC210	Title	Batch :	2017
		Accounting and Financial Management	Semester	II
Hrs/Week:	4		Credits:	4

Course Objective

- To enable the students to understand the concepts and principles for Accounting including company accounting, cost accounting, Management Accounting and Forecasting.

Course Outcomes (CO)

K1	CO1	To remember and recollect the accounting concepts
K2	CO2	To get the idea of cost accounting, management accounting
K3	CO3	To understand the major accounts topics
K4	CO4	To implement the concepts in business

Existing Syllabus

Unit-1

Financial Accounting :Accounting Definition –Objectives – Concepts –Conventions – Classification –Financial accounting – Capital and Revenue items – Basic Records – Preparation of Final accounts of a sole trader.(simple adjustment problems only)

Unit-2

Cost Accounting :Element of Cost – Cost sheet: Meaning – Uses - Preparation of Cost sheet and Quotations. Budgeting and budgetary control: Meaning – Objectives – Classification of budget – Preparation of Production, Cash and flexible budget

Unit-3

Management Accounting :Marginal costing; Meaning – Advantages and Disadvantages – Cost Volume Profits analysis and Break even analysis – Application of Marginal Costing Techniques. Standard costing - Material and Labour Variance.

Unit-4

Financial Analysis :Fund flow and Cash flow analysis: Meaning – Objects – Difference - Preparation of fund flow and cash flow Statements.

Unit-5

Case Studies :Case studies from above context

Books for Study:

- R.L.Gupta, (1999),“*Advanced Accounting*”, Ninth Edition, Sulthanchand and sons,

Books for Reference:

- S.N.Maheswari,(1995),”*Advanced Accounting* “, Sixth Edition, Vikas publications
- S.M.Sukhla,(1999) ,”*Advanced Accounting*”, Fourteenth Edition, Sulthanchand and Sons.

Mapping

PSO CO	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	H	H	M	H	S
CO2	H	M	M	H	H
CO3	H	H	M	H	M
CO4	M	H	H	H	M

S-Strong; H-High; M-Medium; L-Low

Course Designed by	Verified by HoD	Checked by	Approved by
Name and Signature	Name and Signature	CDC	COE
Name: Dr. M. Rathamani	Name: Dr. M. Rajasenathipathi	Name:	Name:
Signature:	Signature:	Signature:	Signature:

Programme code:	MCA	Programme Title :	Master of Computer Applications	
Course Code:	17PMC211	Title	Batch :	2017
		VISUAL PROGRAMMING	Semester	II
Hrs/Week:	4		Credits:	04

Course Objective

- To understand the concepts of windows programming and client server.
- To introduce the concepts of visual programming.
- To study the concept of memory handling operations.
- To design the web based applications using VB.

Course Outcomes (CO)

K1	CO1	To remember, Design, create, build, and debug Visual Basic applications
K2	CO2	To understand the Visual Basic's Integrated Development Environment (IDE).
K3	CO3	To design the concept of Flow of Control and program Structures.
K4	CO4	To evaluate VB projects effectively.

Existing Syllabus

Unit-1

Introduction to Client/Server Computing – Tier Architecture-Client/server building blocks-network bandwidth.

Unit-2

VISUAL BASIC : Introduction – Data Access – ID Environment with Wizards – Working with the VB Development Environment -Development Interface – Event driven Programming – Working with objects and controls – Building Event Driven code – Building a Data Project – Building Objects in VB.

Unit-3

Working with Control Structures and Arrays - Designing User Interfaces - Visual elements of a VB Applications – Design tools and guidelines – Building our sample applications – Error Handling, debugging and deploying applications – Menus, Toolbars, Status bar – Input Box, Message Box.

Unit-4

Connecting to Databases - Data access objects – Remote Data Objects – ActiveX Data Objects – Using DAO, RDO, ADO to build a simple Database Interface, Testing and running Applications .

Unit-5

Working with the VB Report Designer - Data Environment – Building Reports in the designer – Building an interface to the reports-testing and running reports.

Books for Study:

- Robert orfli, Dan Harkey , Jeri Edwards (2011), ” Client/Server Survival Guide”, Third Edition, Wiley India.
- Noel Jerke (2002), “The Complete Reference Visual Basic 6”, Second Edition, Tata McGraw-Hill Edition.

Books for Reference:

- Paul Deitel, H.M.Deitel and G.J.Ayer(2008) “Simply Visual Basic 2008”, Third Edition, Prentice Hall
- Travis Dewire (2003), “Client/Server Computing”, Productivity series, Tata McGraw-Hill Edition

Mapping

PSO CO	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	H	L	H	L	M
CO2	H	H	H	H	H
CO3	M	M	M	M	L
CO4	M	M	M	M	M

S- Strong; H-High; M-Medium; L-Low

Course Designed by	Verified by HoD	Checked by	Approved by
Name and Signature	Name and Signature	CDC	COE
Name:Dr.M.Rathamani	Name:Dr.M.Rajasenathipathi	Name:	Name:
Signature:	Signature:	Signature:	Signature:

Programme code:	MCA	Programme Title :	Master of Computer Applications	
Course Code:	17PMC212	Title	Batch :	2017
		Software Engineering	Semester	II
Hrs/Week:	4		Credits:	4

Course Objective

- The purpose of this syllabus is to provide the students with the concepts of development of programs in a structured and organized way

Course Outcomes (CO)

K1	CO1	To remember and recollect the software concepts
K2	CO2	To get the idea of various phases of software engineering
K3	CO3	To understand the coding part of software
K4	CO4	To implement the concepts by doing the projects

Existing Syllabus

Unit-1

Nature of Software – The unique nature of Web Apps- Software Engineering – Software Process – Software Engineering Practice – Software Myths

A generic process model – Process Assessment and Improvement - Prescriptive Process Model (Waterfall, Incremental, Evolutionary and concurrent)– Specialized Process Models(Component Based Development, Formal Methods Model and Aspect oriented Software Development)

Unit-2

Requirements analysis – Scenario based Modeling – UML Models – Data Modeling concept, class based modeling

Unit-3

Design Concepts : The Design process – Design concepts – Design Model.

Software Architecture – Architectural design – Accessing Alternative Architectural Design- Architectural mapping using data flow.

Unit-4

User Interface design: The golden rules – User interface analysis and design – Interface Analysis – Interface design steps – design evaluation.

Unit-5

Testing conventional Applications:

Fundamentals – Internal and External view of Testing- [White Box Testing – Basis Path Testing – Control Structure testing – Black box Testing – Software Testing Strategies: A Strategic Approach to Software Testing – Strategic issues – unit testing - integration testing – validation testing – System Testing.

Books for Study:

- Roger S. Pressman (2004), “Software Engineering a Practioner’s Approach “, Seventh Edition , McGraw Hill Higher Education

Books for Reference:

- Rajib Mall(2004), “Fundamentals of Software Engineering”, second Edition, PHI Learning Series
- Sommerville (2007) “Software Engineering” Pearson Education, Sixth Edition
- Richard Fairly(2004)“Software Engineering Concepts”, FirstEdition, Tata McGraw-Hill

Mapping

PSO CO	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	H	H	M	H	S
CO2	H	M	M	H	H
CO3	H	H	M	H	M
CO4	M	H	H	H	M

S-Strong; H-High; M-Medium; L-Low

Course Designed by	Verified by HoD	Checked by	Approved by
Name and Signature	Name and Signature	CDC	COE
Name: Dr. E. Rama Devi Signature:	Name: Dr. M. Rajasenathipathi Signature:	Name: Signature:	Name: Signature:

Programme code:	MCA	Programme Title :	Master of Computer Applications	
Course Code:	17PMC213	Title	Batch :	2017
		Programming Lab IIIC++ Lab	Semester	II
Hrs/Week:	4		Credits:	2

Course Objective

- To understand the practical knowledge of C++ Program
- Enable the students to write and execute the program
- Simple system oriented projects

Course Outcomes (CO)

K3	CO1	To remember and recollect the concept of C++
K4	CO2	To get the idea of C++ syntax and its structure
K5	CO3	To validate the projects using C++

Program 1	Programs using Call by Reference, Call by Value and Return by Reference
Program 2	Using Array of Objects
Program 3	Using Static, Dynamic, Constructor, Destructor
Program 4	Programs using Default Arguments and Multiple Constructors
Program 5	Operator Overloading Programs
Program 6	Using Inheritance in programs
Program 7	Using Virtual Function in programs
Program 8	Programs using Concept of pointers
Program 9	Function Overloading programs
Program 10	Using Random access file in different applications

Programme code:	MCA	Programme Title :	Master of Computer Applications	
Course Code:	17PMC214	Title	Batch :	2017
		LAB- IV: VB & Oracle Lab	Semester	I
Hrs/Week:	4		Credits:	02

Course Objective

- Understand the fundamental design concepts of applications using vb and oracle.

Course Outcomes (CO)(for Practicals Only)

K3	CO1	To remember and recollect the concept of visual basic and sql statements
K4	CO2	To get the idea of visual basic structure and DDL,DML,DTL statement
K5	CO3	To validate the projects using VB and oracle database

II SEMESTER	Programming Lab-IV VB and Oracle Lab	16PMC214 Credits:2
Program 1	Programs using Application wizard.	
Program 2	SDI, MDI Drawing inside the view window, Device Context.	
Program 3	Program to handle Basic events.	
Program 4	The message map, saving the view's state, initializing a view Class data member.	
Program 5	Programs using graphical devices interface objects	
Program 6	Program to display modal and modeless dialogs.	
Program 7	Program using Static and dynamic controls.	
Program 8	Program using document – view architecture.	
Program 9	Programs with toolbars and status bars.	

Program 10	Program using SDI and MDI serialization.
Program 11	Program to create dynamic link libraries using MFC.
Program 12	Program to interface with database.
Program 13	Oracle: SQL Operations
Program 14	Queries
Program 15	Database Triggers
Program 16	Procedures
Program 17	Functions
Program 18	Cursors
Program 19	Implicit cursors
Program 20	Packages
Program 21	Exceptions

Mapping

PSO CO	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	M	S	M	M	S
CO2	S	M	H	S	H
CO3	M	L	S	M	S
CO4	M	H	H	L	H

S- Strong; H-High; M-Medium; L-Low

Course Designed by	Verified by HoD	Checked by	Approved by
Name and Signature	Name and Signature	CDC	COE
Name:Dr.B.Azhagusundari Signature:	Name: Dr. M.Rajasenathipathi Signature:	Name: Signature:	Name: Signature:

Programme code:	MCA	Programme Title :	Master of Computer Applications	
Course Code:	17PMC215	Title	Batch :	2017
		Mini Project	Semester	II
Hrs/Week:			Credits:	02

Semester III

Programme code:	MCA	Programme Title :	Master of Computer Applications	
Course Code:	17PMC316	Title	Batch :	2017
		Operating Systems	Semester	III
Hrs/Week:	4		Credits:	04

Course Objective

- To understand the basic concepts of operating system.
- To learn CPU Scheduling algorithms.
- To study the concepts of process synchronization and deadlocks.

Course Outcomes (CO)

K1	CO1	To remember features, types and design considerations of an operating system.
K2	CO2	To understand the various process scheduling algorithms
K3	CO3	To apply the concepts of synchronization and handle Deadlocks
K4	CO4	To review memory management strategies , various page replacement algorithms , design considerations of file system and compare various scheduling algorithms

Existing Syllabus

Unit-1

Introduction _ What is an Os – Mainframe systems – Desktop systems – Multiprocessor systems – Distributed systems – Clustered systems – Real Time systems.

Operating system structures: Systems components – OS services – System calls – System Programs – system structure – Virtual machines – System Design & implementation – system Generation.

Unit-2

Process Management: Process concept – Process scheduling – Operations on process – Cooperating process – Inter process communication. CPU Scheduling: Scheduling Criteria – Scheduling algorithms – Multiple – processor scheduling – Real Time scheduling.

Deadlocks: Deadlock characterization – methods for handling Deadlocks – Deadlock prevention – Deadlock avoidance – Deadlock detection – Recovery from Deadlock

Unit-3

Memory Management: Background – Swapping – Contiguous memory allocation – Paging – Segmentation - Segmentation with paging. Virtual Memory: Demand Paging – Process creation – Page replacement – Allocation of Frames – Thrashing.

Unit-4

I/O Systems: Disk structure – Disk scheduling – Disk Management – Swap – space management

File Systems: File concept – Access methods Directory structure – File system structure – File system implementation – Directory implementation – Allocation Methods – Free space Management – Efficiency & Performance – Recovery.

Unit-5

CASE STUDIES: Linux: Design Principles – Kernel modules – Process Management, scheduling –Memory Management – File systems – Input & Output – Interprocess Communication – Network structure – Security.

Windows 2000: Design principles – system components – Environmental subsystems –File systems- Networking – Programmer Interface.

Books for Study:

- Silberschatz and Galvin , (2003), “Operating System Concepts”, Sixth edition, Addison Wesley Publishing Co.

Books for Reference:

- Achyut S. Godbole, (2010), “Operating Systems”, Third edition, Tata Mc Graw Hill Publications
- Deital, (1990) “An Introduction to Operating Systems”, Second Edition, Addison Wesley Publishing Co.

Mapping

PSO CO	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	S	H	L	S	M
CO2	M	S	L	L	H
CO3	H	L	H	M	M
CO4	M	S	M	L	S

S- Strong; H-High; M-Medium; L-Low

Course Designed by	Verified by HoD	Checked by	Approved by
Name and Signature	Name and Signature	CDC	COE
Name:Dr.M.Rathamani	Name:Dr.M.Rajasenathipathi	Name:	Name:
Signature:	Signature:	Signature:	Signature:

Programme code:	MCA	Programme Title :	Master of Computer Applications	
Course Code:	17PMC317	Title	Batch :	2017
		Resource Management Techniques	Semester	III
Hrs/Week:	4		Credits:	04

Course Objective

Operation Research Solves

- Modeling linear programs and solving with a computer
- Simplex algorithms to solve linear programs
- Other algorithms for linear programming
- Integer Programming
- Network problems
- Non-linear programming

Course Outcomes (CO)

K1	CO1	To remember the basic principles and practices of computing grounded in mathematics and science
K2	CO2	To understand the Problems using various linear Algorithms
K3	CO3	To apply algorithms to the decision making problems
K4	CO4	To analysis the programming algorithms with exercises

Existing Syllabus

Unit-1

Introduction: Simplex method – Graphical method – Standard form – IBFS- Artificial Variable technique – big M – Two phase simplex method

Unit-2

Transportation : Mathematical formulation – Initial feasible solution – North – West Corner Method – Matrix minima method – Vogel's approximation method – Optimized basic feasible solution- Solution by UV method

Assignment Problem : Introduction – Definition – Assignment algorithm – Balanced Assignment Problem – Unbalanced Assignment problem – Hungarian Method

Unit-3

Networks : Networks and basic components – rules – time calculation in networks – CPM – PERT – PERT Calculations- Resource analysis in network scheduling project cost – time cost optimization algorithm

Unit-4

Inventory : Introduction – Reasons for carrying Inventory – Type of Inventories – The Inventory decision – EOQ with no Shortages – Production problem with no shortages – EOQ with Shortages – Production problem with shortages- EOQ with Price Breaks – EOQ with no price breaks – EOQ with two price breaks

Queuing Theory : Queuing System characteristics – Poisson process and exponential distribution (M/M/1) : (α /FIFO) , (M/M/1) : (N/FIFO) , (M/M/C) : (α / FIFO) , (M/M/C) : (N/FIFO)

Unit-5

Sequencing : Introduction- problems of sequencing – problems with n jobs and two machines – Problems with n jobs and three machines – problems with n jobs and m machines

Replacement Theory : Introduction – replacement of equipment or asset the deteriorates gradually – replacement of equipment that fails suddenly

Books for Study:

- Kanti Swarup, P.K. Gupta and Man Mohan, (2008) ,*Operations Research*, Sultan Chand & Sons Educational Publishers, New Delhi.

Books for Reference:

- P.K. Gupta, D.S. Hira (2007), “*Problem in Operations Research*”, S.Chand & Company Ltd.,
- J.K. Sharma(2006) , “*Operations Research Theory and Applications*”, Third Edition, Macmillan India Ltd.,
- Hamdy A. Taha (2008), “*Operations Research : An Introduction*” Eight Edition PHI, New Delhi,

Mapping

PSO CO	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	S	H	M	M	S
CO2	H	M	H	S	H
CO3	H	S	S	H	H
CO4	M	H	H	L	M

S- Strong; H-High; M-Medium; L-Low

Course Designed by	Verified by HoD	Checked by	Approved by
Name and Signature	Name and Signature	CDC	COE
Name:Dr.B.Azhagusundari	Name:Dr.M.Rajasenathipathi	Name:	Name:
Signature:	Signature:	Signature:	Signature:

Programme code:	MCA	Programme Title :	Master of Computer Applications	
Course Code:	17PMC318	Title	Batch :	2017
		Java Programming	Semester	III
Hrs/Week:	4		Credits:	4

Course Objective

- The main purpose of this syllabus is to provide a platform for learning Java and develop some web based applications.
- To understand the need for new language environment for internet applications. To effectively use the huge library routines while solving problems.
- To handle exceptional situations and to access data to external medium. To make use of java utilities for documentation

Course Outcomes (CO)

K1	CO1	To remember the syntax and the concept of Java
K2	CO2	To understand the format and the usage of the coding
K3	CO3	To implement the concept in terms of programming
K4	CO4	To analyze and interpret the concept

Existing Syllabus

Unit-1

An Overview of Java – Data Types – Variables and Arrays – Operators –Control Structures – Introduction to classes

Unit-2

A closer look at Methods and Classes – Inheritance – Packages and interfaces – Exception Handling – String Handling

Unit-3

Multithreaded Programming – Thread Model – Creating a Thread – Creating Multiple Thread Priorities – Synchronization – Interthread Communication. Networking – Basics – Java and the net – Inet Address – TCP/IP Client Sockets – URL – URL Connection – TCP/IP Server Socket – Data Grams.

Unit-4

I/O Basics: Byte Streams – Character Streams –Event Handling – Delegation Event Model – Event Classes – Source of Events – Event Listener Interface -. Applet Basics – Applet Architecture - Applet Skeleton - Simple Applet Display Methods – HTML Applet Tag – Passing Parameters to Applets

Unit-5

Introduction to AWT – Working with Windows – Working with colors – Working with fonts – Using AWT Controls – Layout Managers – Menus – Dialog Boxes – File Dialog – JDBC

Books for Study:

- Patrick Naughtan, (1999),“ *The Complete Reference – Java* “, 4th Edition,Osborne/McGraw-Hill

Books for Reference:

- Deital and Deital, (2012)“ *Java How to Program*”, Third Edition, Pearson Education Asia
- Herbert Schildt, (2002)*The Complete Reference Java 2*, Third Edition, TMH

Mapping

PSO CO	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	H	S	H	H	S
CO2	H	M	H	M	H
CO3	H	M	S	M	M

CO4	M	H	H	M	H
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S-Strong; H-High; M-Medium; L-Low

Course Designed by	Verified by HoD	Checked by	Approved by
Name and Signature	Name and Signature	CDC	COE
Name: Dr. E. Rama Devi	Name: Dr. M. Rajasenathipathi	Name:	Name:
Signature:	Signature:	Signature:	Signature:

Programme code:	MCA	Programme Title :	Master of Computer Applications	
Course Code:	17PMC319	Title	Batch :	2017
		Dot Net Framework	Semester	III
Hrs/Week:	4		Credits:	04

Course Objective

- To understand the concept of .net framework, VB.NET and ADO.NET
- To enable the students to write program in dot net frameworks
- To create simple web applications

Course Outcomes (CO)

K1	CO1	To keep in mind that .NET can be used to design applications for specific business functions such as finance, CRM, supply management etc.
K2	CO2	To get an idea to re-design applications to serve growing needs of an organization
K3	CO3	To apply Dot Net frameworks for entire range of computing devices to work together
K4	CO4	To review the applications of Dot net using ADO .Net .

Existing Syllabus

Unit-1

Microsoft .NET Framework - . The .NET Framework classes –Common Language Runtime – Common Type system and Common Language specification – Visual studio .NET IDE. Visual Basic .NET – Visual Basic .NET IDE –Variables – Data types – Constants – Arrays – Dynamic arrays- Controlling the flow – if statement – select case – Loops.

Unit-2

Procedures: modular coding, arguments – Structures- Collections: Advanced array, ArrayList and hash table. Lists- sorted list. Creating custom class, adding methods and properties. Building Windows Applications – working with forms.

Unit-3

Basic windows controls- common dialog controls- Rich text box control- Debugging and Error Handling: types of errors, Exceptions and structured exception handling – Accessing databases – Building Database applications with ADO .Net- ADO .Net objects.

Unit-4

ASP .NET – Introducing web developer tools – Introduction to ASP .NET server Programming – Using variables and constants in web forms – Working with web objects to store data – Designing .NET web Applications –Programming with Visual Basic .NET – Advanced web controls – Managing data with ASP .NET

Unit-5

C# Programming – Evolution of C# and .NET – Why C# - Elements of C# program – Programming Example – Data types and Expressions – Making decisions – Repeating Instructions – Arrays and Collection – Controls – Programming based on events – OOPs concepts in C#.

Books for Study:

- Evangelos Petroustos(2005) ” Mastering Visual Basic .NET” , First edition, BPB Publications.
- Barbara Doyle, (2008) “Programming in C#” , First Edition,Cengage Learning publications
- Kathleen Kalata ,(2010) “Web Applications using ASP .NET 2.0” ,Third edition, Cengage Learning publications.

Books for Reference:

- David Chappell (2002),” Understanding .NET” , Fourth printing, Pearson education
- David.S.Platt(2003),” Introducing Microsoft .Net” ,Version 1.1, PHI
- G.Andrw Duthie(2003) , “Microsoft ASP .NET Programming with Microsoft Visual C# .NET step by step” , First edition, PHI
- George Shepherd,(2008) ” Microsoft ASP .NET 3.5” ,First edition, PHI, New Delhi
- Steven Holzner(2009), “Visual Basic .NET Programming Black Book” ,New edition, Dreamtech Press.

Mapping

PSO CO \	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	M	L	H	M	M
CO2	H	M	M	M	L
CO3	M	S	L	M	S
CO4	H	L	H	M	M

S- Strong; H-High; M-Medium; L-Low

Course Designed by	Verified by HoD	Checked by	Approved by
Name and Signature	Name and Signature	CDC	COE
Name:Dr.M.Rathamani	Name:Dr.M.Rajasenathipathi	Name:	Name:
Signature:	Signature:	Signature:	Signature:

Programme code:	MCA	Programme Title :	Master of Computer Applications	
Course Code:	17 PMC320	Title	Batch :	2017
		OBJECT ORIENTED ANALYSIS AND DESIGN WITH UML	Semester	III
Hrs/Week:	4		Credits:	4

Course Objective

- Become familiar with all phases of Object –Oriented Analysis and Design.
- Master the main features of the Unified Modeling Language (UML).
- Understand how UML supports the entire OOAD process.

Course Outcomes (CO)

K1	CO1	To remember object oriented systems life cycle development, Object oriented Methodologies and UML Methodologies
K2	CO2	To understand the Rational Unified Process by associating the Object Oriented Analysis and Design with the UML Concepts and conventions
K3	CO3	To deploy concepts of Object Technologies and how to apply them at work using UML
K4	CO4	To figure out ability to analyze and solve challenging problem Domains by using Object design principles, Object oriented Analysis and Design Patterns

Existing Syllabus

Unit-I

Introduction: An Overview of Object- Oriented Systems Development - Introduction-Two orthogonal views of the software-Object Oriented Systems Development Methodology- Why an object orientation?-Overview of the unified approach.

Object-Oriented Systems Development life cycle : Introduction - The software development process - Building high-quality software

Object Oriented Systems Development: a use-case Driven Approach - Reusability.

Unit-II

Object Oriented Methodologies: Introduction: Toward Unification - Too many methodologies - Survey of some of the Object Oriented Methodologies - Rumbaugh Object Modeling Technique - The Booch Methodology - The Jacobson Methodologies - Patterns - Frameworks - The Unified approach

Unit-III

UML Over view: UML History, Goals of UML - UML concept areas- Syntax of Expressions and Diagrams. Nature and purpose of models: A Model, Levels of models, Meaning of model.

UML walkthrough: UML views - static view-use case view - interaction view - state machine view - activity view - physical view - model management view - extensibility constructs. **Static view:** Overview – Classifiers – relationship - associations-generalization-realization-dependencies, constraints, instances. **Use case view:** Overview, actor, use case.

Unit-III

UML Over view: UML History, Goals of UML - UML concept areas- Syntax of Expressions and Diagrams. Nature and purpose of models: A Model, Levels of models, Meaning of model.

UML walkthrough: UML views - static view-use case view - interaction view - state machine view - activity view - physical view - model management view - extensibility constructs. **Static view:** Overview – Classifiers – relationship - associations-generalization-realization-dependencies, constraints, instances. **Use case view:** Overview, actor, use case.

Unit-IV

State machine view: Overview-state machine-event, state, transition, composite state.

Activity view: Overview-activity diagram-activities and other views, activation collaboration, Interaction, sequence diagram, Physical view: Overview-component-node.

Unit-V

Model Management view: Package-Dependencies on packages-access and import dependency, model and subsystem. **Extension Mechanism:** Constraints, tagged view, stereo

types tailoring with UML.

UML Environment: Semantics responsibilities, notation responsibilities, programming language responsibilities, modeling with tools.

Books for Study:

- Ali Bahrami(1999), “*Object Oriented Systems Development Using The Unified Modeling Language* “, McGraw-Hill Edition
- Grady Booch (1993),“*Object Oriented Analysis And Design*”, Second Edition, Addison Wesley Object technology series Edition
- Ivar Jacobson, James, Rumbaugh, Grady Booch, (2004)“*The Uml Reference Manual*”,*Second Edition*, Addison Wesley Publications

Books for Reference:

- Craig Larman(2000), “*Applying UML and patterns*”, Addison Wesley.
- Grady Booch, James Rumbaugh, Ivar Jacobson(2005), “*The Unified Modeling Language User Guide*”, Second Edition,Addison - Wesley Long man, ISBN 0-201-57 168-4.
- Fowler(1996), “*Analysis Patterns*”, Addison Wesley.
- Erich Gamma(1994), “*Design Patterns*”, Addison Wesley.
- Grady Booch, “*Object Oriented Analysis and Design with applications*” , Second edition, Pearson education.

Mapping

PSO CO	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	H	S	M	H	S
CO2	H	M	H	S	H
CO3	M	S	S	M	M
CO4	M	H	H	L	H

S-Strong; H-High; M-Medium; L-Low

Course Designed by	Verified by HoD	Checked by	Approved by
Name and Signature	Name and Signature	CDC	COE
Name: S.Niraimathi	Name: M.Rajasenathipathi	Name:	Name:
Signature:	Signature:	Signature:	Signature:

Programme code:	MCA	Programme Title :	Master of Computer Applications	
Course Code:	17PMC321	Title	Batch :	2017
		Programming Lab – V Java Programming	Semester	III
Hrs/Week:	4		Credits:	2

Course Objective

- To understand the practical knowledge of Java Program
- Enable the students to write and execute the program
- Simple projects using JDBC Connectivity

Course Outcomes (CO)

K3	CO1	To remember and recollect the concept of Java
K4	CO2	To get the idea of java syntax and its structure
K5	CO3	To validate the projects using Java

Program – 1	Class, objects, recursion , constructor, destructor
Program – 2	Array Using sorting techniques
Program – 3	Inheritance
Program – 4	Package
Program – 5	Interface
Program – 6	Multithreading
Program -7	String handling
Program – 8	Applets
Program – 9	AWT tools

Programme code:	MCA	Programme Title :	Master of Computer Applications	
Course Code:	17PMC322	Title	Batch :	2017
		Programming Lab – VI -Dot Net Frameworks Lab	Semester	III
Hrs/Week:	4		Credits:	2

Course Objective

- To understand the practical knowledge of .net framework, VB.NET and ADO.NET
- To enable the students to write and execute program in dot net frameworks
- To create simple web applications by using ASP concepts

Course Outcomes (CO)

K1	CO1	To keep in mind that .NET can be used to design applications for specific business functions such as finance, CRM, supply management etc.
K2	CO2	To get a practical idea to re-design applications to serve growing needs of an organization
K3	CO3	To apply Dot Net framework projects for entire range of computing devices to work together
K4	CO4	To review the applications of Dot net practically.

Program -1	Online Shopping
Program -2	Library Management System
Program -3	EB Bill and generate the necessary reports
Program -4	College Management
Program -5	Railway reservation
Program -6	Airline Reservation
Program -7	Housing Board Maintenance
Program -8	Passport transactions

Program -9	Online Exam
Program -10	Develop a program for Time Table Management System.

Mapping

PSO CO	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	S	L	H	M	M
CO2	H	M	S	S	L
CO3	M	S	L	M	S
CO4	S	L	H	M	M

S- Strong; H-High; M-Medium; L-Low

Course Designed by	Verified by HoD	Checked by	Approved by
Name and Signature	Name and Signature	CDC	COE
Name:Dr.M.Rathamani	Name:Dr.M.Rajasenathipathi	Name:	Name:
Signature:	Signature:	Signature:	Signature:

Programme code:	MCA	Programme Title :	Master of Computer Applications	
Course Code:	17PMC323	Title	Batch :	2017
		Programming Lab –VII OOAD & UML Lab	Semester	III
Hrs/Week:	3		Credits:	1

Course Objective

- Become familiar with all phases of Object –Oriented Analysis and Design to Master the main features of the Unified Modeling Language (UML).

Course Outcomes (CO)

K3	CO1	To remember object oriented systems life cycle development, Object oriented Methodologies and UML Methodologies
K4	CO2	To understand the Rational Unified Process by associating the Object Oriented Analysis and Design with the UML Concepts and conventions
K5	CO3	To verify ability to analyze and solve challenging problem Domains by using Object design principles, Object oriented Analysis and Design Patterns

Existing Syllabus

Program – 1	Music Collection
Program -2	Air line Reservation
Program – 3	Library Management System
Program – 4	Payroll Processing
Program – 5	Railway Reservation
Program – 6	Inventory Management
Program – 7	Hospital Management
Program - 8	Student Information System
Program – 9	Electricity Bill
Program – 10	Human Resource Management
Program – 11	Bank Transactions

Mapping

PSO CO	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	H	S	M	H	S
CO2	H	M	H	S	H
CO3	M	S	S	M	M
CO4	M	H	H	L	H

S-Strong; H-High; M-Medium; L-Low

Course Designed by	Verified by HoD	Checked by	Approved by
Name and Signature	Name and Signature	CDC	COE
Name:	Name:	Name:	Name:
Signature:	Signature:	Signature:	Signature:

Semester IV

Programme code:	MCA	Programme Title :	Master of Computer Applications	
Course Code:	17PMC424	Title	Batch :	2017
		J2EE Technologies	Semester	IV
Hrs/Week:	4		Credits:	4

Course Objective

- To learn the advanced concepts of Java to develop Components.
- To develop distributed applications in J2EE using the Component Technologies.

Course Outcomes (CO)

K1	CO1	To remember Swing, Java Bean, Servlets, JSP, RMI and Enterprise Java Bean
K2	CO2	To understand the distributed nature of the Components
K3	CO3	To deploy the concepts of developing User Interfaces, Server side technologies and integrating them the user interfaces and to import them to the Enterprise level
K4	CO4	To figure out ability to analyze and solve challenging problem Domains by using J2EE Components and technologies

Existing Syllabus

Unit-I

Introduction to JFC-JPanel-JFrame-JApplet-JSplitPane-JTabbedPane-JViewport-JMenus-Items and Labels-JTextField-JTextArea – Buttons - JButton classes- JCheckBoxes-JRadioButton - JCombo Boxes and JList

Unit-II

Advanced JFC components-JTrees-Jtables-JInternalFrame-JDesktopPane-JDesktopManager-JProgressbar.

Java Beans-Introduction to Java Bean-Advantages of a Java Bean-Application Builder tools-The Bean Developer Kit (BDK)-jar files-Introspection-Developing a simple Bean-Using Bound properties-Using Bean Info Interface-Constrained properties-Persistence-Customizes-Java Beans API.

Unit-III

Servlet over view and Architecture-Movement to server side java – practical Applications for Java Servlets-Java Servlet Alternatives-Reasons to use java Servlets-Java Server Architecture-Servlet Basics-The Life cycle of the Servlet-A basic Servlet.

Servlet Chaining-Definition for Servlet Chaining-uses of Servlet Chains-A practical example using Servlet Chaining-Servlets and JDBC-Two Tier and Three Tier Database access models-JDBC Driver types-JDBC Servlet Basics-A basic JDBC Servlet-Session Tracking-Using Cookies-Using Session objects

Unit-IV

Enterprise Java Beans (EJB)-Introduction-Transaction-Transaction processor-Two Tier and Three Tier Client/Server Architecture-Distributed Transaction processing-EJB's Role -EJB's Architecture-Logical Architecture-Overview of EJB's Software Architecture-A High Level view of an EJB conversation-RMI clients-CORBA Clients-Building and Deploying EJB's-Roles of EJB –Requirements-Design-Implementation

Unit-V

Enterprise Java Beans (EJB)-Introduction-Transaction-Transaction processor-Two Tier and Three Tier Client/Server Architecture-Distributed Transaction processing-EJB's Role -EJB's Architecture-Logical Architecture-Overview of EJB's Software Architecture-A High Level view of an EJB conversation-RMI clients-CORBA Clients-Building and Deploying EJB's-Roles of EJB –Requirements-Design-Implementation

Books for Study:

- Dr.Sathya Raj Pantham (1999), “*Pure JFC Swing*”, 1st edition, Tech Media Publications Sam Series.
- Troy Bryan Downing (1998),” *Java RMI*”, First edition, IDG Books Worldwide Inc.
- Tom Valesky (1999), “*Developing distributed applications using Enterprise Java*

Bean", 1st edition ,Addison Wesley.

- Karl Avedal,Danny Ayers (2000), "*Professional JSP*", 1st edition, Wrox Press Ltd.
- James GoodWill (2001), "*Developing Java Servlets*", 2nd edition, Sams series.

Books for Reference:

- Patrick Naughton and Herbert Scheldt (2000), “*The Complete Reference Java 2*”, 3rd Edition, TMH Publications

Mapping

PSO CO \	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	H	S	M	H	S
CO2	H	M	H	S	H
CO3	M	S	S	M	M
CO4	M	H	H	L	H

S-Strong; H-High; M-Medium; L-Low

Course Designed by	Verified by HoD	Checked by	Approved by
Name and Signature	Name and Signature	CDC	COE
Name: S.Niraimathi	Name: M.Rajasenathipathi	Name: S.Niraimathi	Name:
Signature:	Signature:	Signature:	Signature:

Programme code:	MCA	Programme Title :	Master of Computer Applications	
Course Code:	17PMC425	Title	Batch :	2017
		Computer Networks	Semester	IV
Hrs/Week:	4		Credits:	04

Course Objective

- This syllabus provides an understanding of the various principles, protocols and design aspects of computer networks.
- Discuss, learn and critique various network technologies and data communication technologies.
- To learn the wide area and local area networks.
- To learn the various communication protocols and applications.

Course Outcomes (CO)

K1	CO1	To remember the concept of OSI and TCP network models and the layers associated functionalities
K2	CO2	To understand different types of network models and topology
K3	CO3	To apply different types of error detection and correction mechanisms
K4	CO4	To Analyze flow control and Error control mechanism using network layer concept

Existing Syllabus

Unit-1

Network fundamentals: use of computer networks – network hardware – network software – reference model – OSI reference model – TCP/IP model

Physical Layer : The theoretical basis for data communication – guided transmission media – wireless transmission – communication satellites.

Unit-2

Data link Layer : Data link layer design issue – error detection and correction – elementary data link protocols – sliding window protocol – protocol specification and verification.

Unit-3

Network Layer: Network layer design issues – routing algorithms(shortest path routing , distance vector, link state, mobile routing) – Internetworking- network layer in the internet (IP protocol, IP addresses, subnet, internet control protocols)

Unit-4

Transport Layer: The transport service- elements of transport protocol-a simple transport protocol- the internet transport protocols: TCP(TCP service models, TCP protocol)-UDP- wireless TCP and UDP.

Unit-5

Application Layer: DNS, Telnet, rlogin, SNMP, Email,World Wide Web. Multimedia: Introduction to Digital Audio – Audio Compression – Streaming Audio- Internet Audio- Voice Over IP-Introduction to Video- Video Compression – The JPEG Standard – The MPEG Standard

Books for Study:

- Andrew S Tanenbaum, (2003) ,“*Computer Networks*”, IV Edition, Pearson ducation.

Books for Reference:

- Larry L.Peterson & Bruce S.Davie, (2000) “*Computer Networks – A Systems Approach*”, 2nd edition , Harcourt Asia/Morgan Kaufmann,.
- William Stallings(1997), “*Data and Computer Communications*”, 5th edition, PHI publications.
- P.Green, (1982), “*Computer Network Architecture and protocols*”, 1st edition, Plenum Press

Mapping

CO \ PSO	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	M	M	M	S	H
CO2	L	M	H	L	H
CO3	S	H	S	S	M
CO4	M	S	M	S	H

S- Strong; H-High; M-Medium; L-Low

Course Designed by	Verified by HoD	Checked by	Approved by
Name and Signature	Name and Signature	CDC	COE
Name:Dr.B.Azhagusundari	Name: Dr.M.Rajasenathipathi	Name:	Name:
Signature:	Signature:	Signature:	Signature:

Programme code:	MCA	Programme Title :	Master of Computer Applications	
Course Code:	16PMC426	Title	Batch :	2017
		PHP and MYSQL	Semester	IV
Hrs/Week:	4		Credits:	4

Course Objective

- Aim of the course is to understand the concept of PHP and MYSQL and combine PHP with MYSQL Databases.

Course Outcomes (CO)

K1	CO1	To remember the syntax and the concept of PHP and MYSQL
K2	CO2	To understand the format and the usage of the coding
K3	CO3	To implement the concept in terms of programming
K4	CO4	To analyze and interpret the concept

Existing Syllabus

Unit-1

Importance of PHP and MYSQL Server side Scripting Overview: Static HTML-Client/Side Technologies-Server side Scripting. Learning PHP syntax and variables: PHP syntax-comments-variables-types in PHP-Control Structures

Unit-2

PHP Functions- Passing Information with PHP - Learning PHP string Handling- Learning Arrays: Creating Arrays – Retrieving values-Multidimensional arrays-Inspecting Arrays-Deleting from Arrays-Iteration.

Unit-3

Learning PHP Number Handling: Numerical Types-Mathematical Operators-Simple mathematical Functions-Randomness. Working with File System -Working with Cookies and sessions. Handling exception with PHP

Unit-4

MySQL : Introducing Databases and MySQL-Learning Structured Query Language(SQL).Integrating PHP with MySQL-Performing Database Queries- Integrating web forms and databases.

Unit-5

Improving database efficiency-MYSQL functions: Using SQL functions AVG, COUNT, SUM, MIN, MAX, LCASE, UCASE- MySQL Joins.

Books for Study:

- Steve Suehring, Tim Converse, Joyce Park (2009)“*PHP 6 and MySQL 6 Bible*” ,1stedition,Wiley Publishing Inc.

Books for Reference:

- Robin Nixon (2012), “*Learning PHP , MYSQL,Java script and CSS*”,2nd edition, O'Reilly media inc.,
- By Lynn Beighley, Michael Morrison (2009),“*Head First PHP & MySQL*”,1st edition, O'Reilly Media, Inc.
- Steve Holzner (2008)“*PHP: The Complete Reference* “, 1st edition,Mc Graw Hill Publications.

- **Mapping**

PSO CO	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	M	H	H	H	S
CO2	H	H	H	S	H
CO3	M	H	M	M	M
CO4	M	H	H	M	M

S-Strong; H-High; M-Medium; L-Low

Programme code:	MCA	Programme Title :	Master of Computer Applications	
Course Code:	17PMC427	Title	Batch :	2017
		Elective I :Information security	Semester	IV
Hrs/Week:	4		Credits:	04

Course Objective

- To understand the basics of Information Security.
- To know the legal, ethical and professional issues in Information Security.
- To know the aspects of risk management.
- To become aware of various standards in this area.
- To know the technological aspects of Information Security

Course Outcomes (CO)

K1	CO1	To remember the concept of SDLC and secSDLC
K2	CO2	To understand the concept of security attacks, threads and issues
K3	CO3	To apply the concept of risk management
K4	CO4	To analysis the concept of logical and physical design

Existing Syllabus

Unit-1

INTRODUCTION :History- What is Information Security- Critical Characteristics of Information- NSTISSC Security Model,-Components of an Information System- Securing the Components- Balancing Security and Access,-The SDLC-The Security SDLC

Unit-2

SECURITY INVESTIGATION :Need for Security- Business Needs- Threats- Attacks- Legal- Ethical and Professional Issues

Unit-3

SECURITY ANALYSIS :Risk Management: Identifying and Assessing Risk- Assessing and Controlling Risk

Unit-4

LOGICAL DESIGN :Blueprint for Security- Information Security Policy- Standards and Practices, ISO 17799/BS 7799,-NIST Models,-VISA International Security Model,-Design of Security Architecture,-Planning for Continuity

Unit-5

PHYSICAL DESIGN :Security Technology-IDS- Scanning and Analysis Tools,-Cryptography,- Access Control Devices- Physical Security- Security and Personnel **Italicized texts are for self study*

Books for Study:

- Michael E Whitman and Herbert J Mattord (2003), "*Principles of Information Security*", Fourth Edition, Vikas Publishing House, New Delhi.

Books for Reference:

- Micki Krause, Harold F. Tipton (2004), "*Handbook of Information Security Management*", Vol 1-3 CRC Press LLC,.
- Stuart Mc Clure, Joel Scrambray, George Kurtz,(2003) "*Hacking Exposed*", Tata McGraw-Hill.
- Matt Bishop,(2003) "*Computer Security Art and Science*", Second Edition,Pearson/PHI,.

Mapping

CO \ PSO	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	S	S	L	H	H
CO2	L	M	H	L	S
CO3	H	H	L	M	H
CO4	M	H	S	L	M

S- Strong; H-High; M-Medium; L-Low

Course Designed by	Verified by HoD	Checked by	Approved by
Name and Signature	Name and Signature	CDC	COE
Name:Dr.B.Azhagusundari Signature:	Name:Dr.M.Rajasenathipathi Signature:	Name: Signature:	Name: Signature:

Programme code:	MCA	Programme Title :	Master of Computer Applications	
Course Code:	17 PMC428	Title	Batch :	2017
		Elective II:Software Testing	Semester	IV
Hrs/Week:	4		Credits:	04

Course Objective

- This syllabus focuses on principles of testing, Test automation.
- It also covers some of the recognized methodologies for testing.
- It discusses Test Management, test metrics and measurements.

Course Outcomes (CO)

K1	CO1	To remember the fundamentals of Software Testing Life Cycle
K2	CO2	To understand the Design Manual Test cases for Software Project
K3	CO3	To apply the realistic problem for different category of software.
K4	CO4	To analysis the process related activity and testing techniques

Existing Syllabus

Unit-1

Testing, verification and validation – White Box Testing : Static testing – Structural testing - challenges – Black Box Testing : What, Why, When to do ? How to do ?

Unit-2

Integration Testing: Integration Testing as a type of testing, Integration testing as a phase of testing – Scenario testing – defect bash.

System and Acceptance testing: Functional System Testing – Non- Functional testing – Acceptance Testing.

Unit-3

Performance Testing – Methodology, Tools, Process, Challenges, Regression testing - Types, When to do? What to do?, How to do ? Challenges. Internationalization testing.

Unit-4

Test management and automation: Test planning-test management-test process-test reporting-
Best practices.

Unit-5

Software Test Automation: Skills needed for automation- what to automate, scope of automation – design and architecture for automation- generic requirements for test tools framework- selecting a test tool- challenges.

Test Metrics and measurements.

Books for Study:

- Srinivasan Desikan, Gopalswamy Ramesh(2009), “*Software testing principles and practices*” ,7th impression , Pearson education

Books for Reference:

- K.Mustafa, R.A.Khan (2009), “Software testing concepts and practices”,5th edition, Narosa publishing house Pvt. Ltd.
- Ron Patton (2006), “Software Testing”, Second Edition ,Pearson Education

Mapping

CO \ PSO	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	M	M	M	S	M
CO2	S	S	M	M	H
CO3	L	H	S	H	S
CO4	M	S	M	S	H

S- Strong; H-High; M-Medium; L-Low

Course Designed by	Verified by HoD	Checked by	Approved by
Name and Signature	Name and Signature	CDC	COE
Name:Dr.B.Azhagusundari Signature:	Name: Dr.M.Rajasenathipathi Signature:	Name: Signature:	Name: Signature:

Programme code:	MCA	Programme Title :	Master of Computer Applications	
Course Code:	17PMC429	Title	Batch :	2017
		Programming Lab – VIII J2EE	Semester	IV
Hrs/Week:	4		Credits:	2

Course Objective

- To learn the advanced concepts of Java to develop Components.
- To develop distributed applications in J2EE using the Component Technologies.

Course Outcomes (CO)

K3	CO1	To remember Swing, Java Bean, Servlets, JSP, RMI and Enterprise Java Bean
K4	CO2	To understand the distributed nature of the Components
K5	CO3	To verify ability to analyze and solve challenging problem Domains by using J2EE Components and technologies

Existing Syllabus

Module 1	Programs to create Tabbed panes, Split panes, JTree, JTable, JMenus, JProgress bar and MDI Frames
Module 2	Beans Programs to demonstrate association among inbuilt beans, beans with simple, bound, constrained properties and introspection of beans
Module 3	Servlets Programs to demonstrate Generic and HTTP servlets, servlet chaining, session tracking using cookies and session objects and JDBC servlet interaction
Module 4	JSP Programs to demonstrate Scriptlets, Expressions and directives

Programme code:	MCA	Programme Title :	MCA	
Course Code:	17 PMC430	Title	Batch :	2017
		Programming Lab- IX PHP & MySQL LAB	Semester	IV
Hrs/Week:	4		Credits:	2

Course Objective

- To understand the practical knowledge of PHP Program
- Enable the students to write and execute the program
- Simple web based projects using PHP MYSQL connectivity

Course Outcomes (CO)

K3	CO1	To remember and recollect the concept of Java
K4	CO2	To get the idea of java syntax and its structure
K5	CO3	Enable the students to write the PHP projects

Program -1	Create a PHP program for registration form which contains fields name, RollNo, Gender and a submit button
Program -2	Write a PHP program to check whether the given number is prime or not
Program -3	Create PHP Forms
Program -4	Dynamically storing and manipulating items stored in a database using HTML forms and PHP
Program -5	Searching a database using PHP
Program -6	Accessing a MySQL database using PHP
Program -7	Connecting to MySQL with PHP
Program -8	Performing SQL Queries with PHP
Program -9	Modify and update a MySQL database from a webpage using HTML forms and PHP
Program -10	Modify and update a MySQL database from a webpage using HTML forms and PHP

Semester V

Programme code:	MCA	Programme Title :	Master of Computer Applications	
Course Code:	17PMC532	Title	Batch :	2017
		Unix and shell programming	Semester	V
Hrs/Week:	4		Credits:	04

Course Objective

- To enable the students to understand the core principles UNIX technology.
- To create effective Shell programming and kernel programs based on operating system concepts of Unix
- To learn the system administration tasks of Unix

Course Outcomes (CO)

K1	CO1	To remember the basic set of commands and utilities in UNIX systems
K2	CO2	To understand UNIX library functions , communication facility and system calls
K3	CO3	To deploy shell programming in UNIX systems.
K4	CO4	To analyze various administrative task in Unix environment

Existing Syllabus

Unit-I

Introduction to UNIX: UNIX operating system- background- multiuser capability-multi tasking capability-features of Unix (Communication, Security, Pattern matching, Portability, Open systems, Programming facility, Tool gate, System calls and Library, User interface, Documentation, Online help).

UNIX Kernel: Kernel and Shell, Types of shell- File systems- Types of files, Structure of file working with file (touch, cat, cp, rm, md, ls, sort dwc commands)- working with directories (cd, pwd, mkdir, rmdir commands)- file and dir, permission, miscellaneous commands (log

name, id, uname, ply, who, day)- filename substitutions (* and ?)- commands files, sleep and walk up.

Unit-II

File Systems: Boot block- super block- Inode table- data blocks- storage of files- disk related commands (df, du, ulimit)

UNIX Tools: General in UNIX (password, calendar, banner, dd, file compression)- Input and Output redirection and piping- redirection in UNIX, redirection standard output- redirection standard input- pipelines in UNIX- splitting with pipeline using the head and tail commands- Vi editor- modes of operation- commands used to handling the text- block commands- set commands- handling multiple file.

Unit-III

Communication and scheduling: The bulletin board- message of day- two way communication- message to users- mail facility- addressing all users- delaying shell script- calendar and batch commands- cron facility.

Filters and process: Simple awk filtering- formatting output- number processing- positional parameter and shell variables, nawk, getline statements- built in variables- arrays, functions- Interface with the shell.

SH Process: Parents and Children- Process status- System process- Multi jobs in background- Background process using kill, nice and time command.

Unit-IV

Shell Programming: Shell script- Shell variables- Shell keywords, User defined variables- Passing command line arguments- echo command- looping with for, if, exit, else, break and while statements- continue statement- case statement- using input to shell procedures- shell functions- input/output redirection meta character- conditional execution using AND and OR operation- debugging shell procedures- simple programs.

Unit-V

System Administration: Adding and removing users- daily administration- starting up, shutting down the system- disk management- formatting disk- making and mounting a file

system- unmounting the file system- ensuring system security- file system administration- backups- important commands (tar, fack, lost, found, cron).

Books for Study:

- Sumitabha Das,(2006) “*Unix Concepts and Applications*”,*Fourth Edition*,, Mc Graw Hill Publications
- 2.Yeswant Kanitkar , (2003), “*Unix and Shell programming*”, Second Edition, BPB Publication

Books for Reference:

- Maruice J. Bach, Reprint (2001), “*The design of the UNIX operation system*”, 4th Indian reprint, Prentice Hall of India
- W. Richard Stevens, (1990), “*Unix Network Programming*”, 2nd edition, Prentice Hall of India,.
- Rebecca Thomas, Lawrence R. Rogers, Jean L. Yates, (1987), “*Advanced Programmers Guide to Unix System V*”, Mc Graw Hill International Editions.

Mapping

CO \ PSO	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	S	H	M	M	S
CO2	H	M	H	S	H
CO3	H	S	S	H	H
CO4	M	H	H	L	M

S- Strong; H-High; M-Medium; L-Low

Course Designed by	Verified by HoD	Checked by	Approved by
Name and Signature	Name and Signature	CDC	COE
Name:Dr.M.Rajasenathipathi	Name:Dr.M.Rajasenathipathi	Name:	Name:
Signature:	Signature:	Signature:	Signature:

Programme code:	MCA	Programme Title :	Master of Computer Applications	
Course Code:	17PMC533	Title	Batch :	2017
		Data Mining and warehousing	Semester	V
Hrs/Week:	4		Credits:	4

Course Objective

- To understand the concept of data warehouse and data mining and its application.
- To understand OLTP and developing a data warehouse, data mining technique and algorithms.
- To learn data mining environment and applications.

Course Outcomes (CO)

K1	CO1	To remember and recollect the concept of Data base
K2	CO2	To get the idea of data mining and warehousing
K3	CO3	To apply the concept in the real world problems
K4	CO4	To analyze the results with practical problems

Existing Syllabus

Unit-1

Introduction – Data Mining – Need of Data Mining – Kinds of data – Data mining Functionalities – Interesting patterns – classification of data mining systems.

Data Preprocessing – Need of preprocessing – Descriptive Data summarization – Data cleaning – Data integration and Transformation.

Unit-2

Data Warehouse – Multidimensional Data Model – Data warehouse Architecture – From data warehouse to data mining.

Unit-3

Classification and Prediction - Definition - Issues regarding classification and Prediction -
Decision Tree Induction – Bayesian Classification – Rule Based Classification – Prediction

Unit-4

Cluster Analysis – Types of Data – categorization of major clustering methods – Partitioning Methods
– Hierarchical Methods – Density Based Methods – Grid Based Methods .

Unit-5

Data Mining Applications – Data mining system Products and Research prototypes – Social impacts
of Data Mining – Trends in Data Mining.

Books for Study:

- Jiawei Han and Micheline Kamber (2008) “*Data Mining Concepts and Techniques*” Second Edition, Elsevier, Reprinted .

Books for Reference:

- Margaret H. Dunham (2003), “*Data mining introductory and advanced topics*”, Pearson education,.
- C.S.R. Prabhu, “*Data warehousing concepts, techniques, products and applications*”, PHI, Second Edition.
- ArunK.Pujari (2003), “*Data Mining Techniques*”, Universities Press (India) Pvt. Ltd.,.
- Alex Berson, Stephen J. Smith (2001), “*Data warehousing, data mining, & OLAP*”, TMCH.

Mapping

PSO CO	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	H	H	H	H	S
CO2	H	M	M	S	H
CO3	H	H	M	M	M
CO4	M	H	H	H	M

S-Strong; H-High; M-Medium; L-Low

Programme code:	MCA	Programme Title :	Master of Computer Applications	
Course Code:	17PMC534	Title	Batch :	2017
		Web Programming	Semester	V
Hrs/Week:	4		Credits:	04

Course Objective

- To understand the basics of Information Security.
- To know the legal, ethical and professional issues in Information Security.
- To know the aspects of risk management.
- To become aware of various standards in this area.
- To know the technological aspects of Information Security

Course Outcomes (CO)

K1	CO1	To remember the basic structure of JavaScript and create dynamic WebPages
K2	CO2	To understand the dynamic WebPages validation
K3	CO3	To apply the WebPage design using various scripting language
K4	CO4	To analysis the design concept to various web site design development

Existing Syllabus

Unit-1

Java Script(JS): Introduction – Web pages- Database Connectivity- Client Side Java Script – Advantages of Java Script – Writing Java script into HTML – Basic Programming techniques-Data types & Literals - Functions - Operators Comparisons - Conditions -Switch - Loop :For -While - Breaks - Errors - Event Handling - Validation

JS Html DOM: DOM Introduction DOM HTML DOM CSS DOM Events DOM Nodes

JS Object: Number - String -Date - Array – Boolean- Math- - RegExp - Window - Screen – Location- History Navigator PopupAlert - Timing - Cookies - Libraries - JQuery - Prototype

Unit-2

VB Script: VBScript Basics- VB Variables Sub types and Constants- Arrays- VBScript operators-VBScript Procedures- Program control and Structures- Built in functions and statements, objects, using Cookies, frames and Animation with VB Script - Strings and Numbers-Message and Input boxes- Dates and Times-The Document Object Model – Event handlers

Unit-3

ASP: ASP Introduction- Syntax- Variables- Procedures - Forms - Cookies - Session - Application - Send Email - **Objects:** Response - request -Session Server - Error - file System - TextStream - Drive - File - Folder -Dictionary

ADO Components: AdRotator- Browser Cap -Content Linking - Content Rotator

Unit-4

Introducing XML: An Eagle's Eye View of XML -XML Applications- Your First XML Document- Structuring Documents- Attributes, Empty Tags, and XSL-Well-Formed XML Documents

Document Type Definitions: Document Type Definitions and Validity - Element Declarations- Attribute Declarations- Entity Declarations- Namespaces

Style Sheets: CSS Style Sheets-CSS Layouts- CSS Text Styles- XSL Transformations- XSL Formatting Objects

Unit-5

Introducing SOA: Fundamental SOA- Common Misperceptions about SOA- Common tangible benefits of SOA- Common pitfalls of adopting SOA. The Evolution of SOA:-from XML to Web services to SOA, The continuing evolution of SOA, The roots of SOA. Web Services and Primitive SOA: The Web services framework- Services, Service descriptions, messaging with SOAP.

Books for Study:

- Ivan Bayross(2009), “Web Enabled Commercial Application Development Using HTML,DHTML,Javascript,PERL,CGI” Edition IIIBPB Publications.

- William-J-Orvis(1998), “Understanding VB Script-Web page Interactivity”, Galgotia Publications,
- H.M Deitel, P.J Deital, T.R Neito, T.M Lin, P Sadhu(2001) “XML – How to Program-Featuring Java2, Perl CGI and Active Server Pages”, Pearsons Education, 2nd Edition.
- Thomas Erl ,” Service-Oriented Architecture: Concepts, Technology & Design”, Pearson Education Pte Ltd 2008.

Books for Reference:

- Nicholas C. Zakas “Professional JavaScript for Web Developers “ 3rd Edition
- Cristopher J Goddard, Mark White “Mastering VB Script “— Galgotia Publications
- Elliotte Rusty Harold(2004), “XML 1.1 Bible”, 3rd Edition, John Wiley & Sons.

Mapping

CO \ PSO	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	M	H	M	H	S
CO2	H	M	H	M	H
CO3	H	L	S	S	L
CO4	M	H	H	L	H

S- Strong; H-High; M-Medium; L-Low

Course Designed by	Verified by HoD	Checked by	Approved by
Name and Signature	Name and Signature	CDC	COE
Name:Dr.B.Azhagusundari	Name: Dr.M.Rajasenathipathi	Name:	Name:
Signature:	Signature:	Signature:	Signature:

Programme code:	MCA	Programme Title :	Master of Computer Applications	
Course Code:	17PMC535	Title	Batch :	2017
		Elective III:Python programming	Semester	V
Hrs/Week:	4		Credits:	4

Course Objective

- To enable the students to understand the core principles of the Python Language.
- To use the tools to produce well designed programs in python.
- To create effective GUI applications.

Course Outcomes (CO)

K1	CO1	To remember the principles of structured programming Recognize and construct common programming idioms: variables, loop, branch, subroutine, and input/output.
K2	CO2	To understand the common programming idioms: variables, loop, branch, subroutine, and input/output
K3	CO3	To deploy the concepts of lists, tuples, dictionaries, standard libraries, modular programming and the design of user interfaces
K4	CO4	To figure out ability to analyze and solve the problems using advanced facilities of the Python language

Existing Syllabus

Unit-I

Introduction: Introduction to Python- an interpreted high level language- interactive mode and script mode. Variables- Expressions and Statements: Values- Variables and keywords; Operators and Operands in Python: (Arithmetic - relational and logical operators)- operator precedence- Expressions and Statements(Assignment statement); Taking input (using rawinput() and input()) and displaying output(print statement);Putting Comments.

Unit-II

Built in Functions: Importing Modules (entire module or selected objects) – invoking built-in functions - functions from math module (ceil, floor, fabs, exp, log, log10, pow, sqrt, cos, sin, tan, degrees, radians) - using random() and randint() functions of random module to generate random numbers- composition. Defining functions- invoking functions- passing parameters (default parameter values- keyword arguments).

Unit-III

Variables: Scope of variables- void functions and functions returning values- flow of execution Conditional constructs and looping: if.. else statement -While- For (range function)- break- continue- - pass- Nested loops- use of compound expression in conditional constructs.

Strings: Creating- initializing and accessing the elements- String operators: +, *, in, not in, range slice[n:m] Comparing strings using relational operators.

String functions & methods: len- capitalize- find- isalnum- isalpha- isdigit- lower- islower- isupper- upper-lstrip- rstrip- isspace- istitle- partition- replace- join- split- count- decode- encode-swapcase- PatternMatching.

Unit-IV

List functions & methods: Concept of mutable lists- creating- initializing and accessing the elements- traversing- appending-updating and deleting elements - List operations (joining- list slices)-len- insert- append- extend- sort- remove- reverse- pop. Dictionaries: Concept of key-value pair- creating- initializing and accessing the elements in a dictionary- traversing- appending- updating and deleting elements. Dictionary functions & Methods: cmp- len- clear()- get()- has_key()- items()- keys()- update()- values(). Tuples: Immutable concept - creating - initialising and accessing the elements in a tuple. Tuple functions: cmp()- len()- max()- min()-tuple().

Unit-V

Modules: Modules-Standard Modules – sys- time- dir functions. Exceptions- Errors- Run Time Errors- The Exception Model- Exception Hierarchy- Handling Multiple Exceptions-raise - assert- Writing Your Own Exception Classes. GUI: Introduction- Components and Events- An Example GUI- The root Component- Adding a Button- Entry Widgets- Text Widgets- Checkbuttons- Radiobuttons- Listboxes- Frames- Menus- Binding Events to Widgets.

Books for Study:

- Mark Lutz “Learning Python”, 5th Edition, 2013 (UNIT I -V).
- Welsey J. Chun, “Core Python Programming”, Prentice Hall, 2001 (UNIT I -IV).
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Books for Reference:

- Guido van Rossum and Fred L. Drake- Jr, “An Introduction to Python “ Foundation, November 2006.

Mapping

PSO CO \	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	H	S	M	H	S
CO2	H	M	H	S	H
CO3	M	S	S	M	M
CO4	M	H	H	L	H

S-Strong; H-High; M-Medium; L-Low

Course Designed by	Verified by HoD	Checked by	Approved by
Name and Signature	Name and Signature	CDC	COE
Name: S.Niraimathi	Name: M.Rajasenathipathi	Name:	Name:
Signature:	Signature:	Signature:	Signature:

Programme code:	MCA	Programme Title :	Master of Computer Applications	
Course Code:	17PMC536	Title	Batch :	2017
		Programming Lab -X	Semester	V

Hrs/Week:	4	Unix Programming Lab	Credits:	02
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Course Objective

- To familiarize students with the Linux environment
- To learn the fundamentals of shell scripting/programming
- To familiarize students with basic linux administration

Course Outcomes (CO)

K1	CO1	To understand core principles UNIX technology.
K2	CO2	To understand UNIX library functions , communication facility and system calls
K3	CO3	To deploy shell programming in UNIX systems
K4	CO4	To analyze various administrative task in Unix environment s

Program -1	File Related commands
Program -2	Directory related commands
Program -3	Shortest Job First algorithm
Program -4	Round Robin scheduling algorithm
Program -5	FIFO Algorithm
Program -6	Dead Lock detection algorithm
Program -7	Paging
Program -8	Segmentation
Program -9	DOS Commands
Program -10	Command Line Arguments

Mapping

PSO CO	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	S	S	M	H	S
CO2	H	M	H	L	H
CO3	L	L	L	M	L
CO4	M	L	H	S	H

S- Strong; H-High; M-Medium; L-Low

Course Designed by	Verified by HoD	Checked by	Approved by
Name and Signature	Name and Signature	CDC	COE
Name: M.Rajasenathipathi	Name: M.Rajasenathipathi	Name:	Name:
Signature:	Signature:	Signature:	Signature:

Programme code:	MCA	Programme Title :	Master of Computer Applications	
Course Code:	17PMC537	Title	Batch :	2017
		Programming Lab –XI –Web Programming Lab	Semester	V
Hrs/Week:	4		Credits:	2

Course Objective

- To understand the practical knowledge of .scripting language
- To provide an opportunity to practice various Scripts like HTML, XML and JavaScript. To design the Web application using CSS and Built in functions.
- To create simple web applications by using xml concepts

Course Outcomes (CO)

K3	CO1	To remember and recollect the concept of scripting language
K4	CO2	To get the idea of scripting syntax and its structure
K5	CO3	To validate the projects using scripting language

III Semester	Programming Lab –XI –Web Programming Lab
Program -1	Create a JS code block using arrays to generate the current date in words
Program -2	Create a JS code block which checks the contents entered in a forms text element
Program -3	Create a JS code block that validate username and password
Program -4	Create a web page using two image files switch between one another at the mouse pointer moves over the images
Program -5	Create a web page which accept the user information and commands on the web site to check if all the text fields have been entered with data

	else display an alert
Program -6	Write text using VBscript
Program -7	Write html using VBscript
Program -8	Create an Array Using VBScript
Program -9	Create a Procedure using VBScript
Program -10	Write a program using VBScript built in functions
Program -11	Design the XML elements to hold membership information for a computer club
Program -12	XML document to hold the elements for 5 students
Program -13	Create a Link to a CSS to display student information
Program -14	Create a Cookie program using ASP
Program -15	Create a session object using ASP

Mapping

PSO CO	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	L	M	H	M	M
CO2	H	S	S	H	L
CO3	M	S	M	M	S
CO4	L	S	H	M	M

S- Strong; H-High; M-Medium; L-Low

Course Designed by	Verified by HoD	Checked by	Approved by
Name and Signature	Name and Signature	CDC	COE
Name:Dr.B.Azhagusundari	Name:Dr.M.Rajasenathipathi	Name:	Name:
Signature:	Signature:	Signature:	Signature:

Programme code:	MCA	Programme Title :	Master of Computer Applications	
Course Code:	17PMC538	Title	Batch :	2017
		Programming Lab –XII – Python Programming	Semester	V
Hrs/Week:	4		Credits:	1

Course Objective

- To give a basic introduction to object-oriented and procedural programming, using Python

Course Outcomes (CO)

K3	CO1	To remember the principles of structured programming Recognize and construct common programming idioms: variables, loop, branch, subroutine, and input/output.
K4	CO2	To understand the common programming idioms: variables, loop, branch, subroutine, and input/output
K5	CO3	To figure out ability to analyze and solve the problems using advanced facilities of the Python language

Existing Syllabus

Program – 1	Program to find the factorial of a number using recursion
Program – 2	Program to implement the control structures
Program – 3	Program to implement the list
Program – 4	Program to implement the operations and methods of the String
Program – 5	Program to implement the Tuples
Program – 6	Program to implement the Dictionaries
Program -7	Program to import and use the system libraries
Program-8	Program to implement the modules

Program-9	Program to implement the standard modules
Program-10	Program to implement Error handling
Program -11	Program to implement Exceptions
Program-12	Program to build the user interface
Program-13	Program to find Leap year or not
Program-14	Program to generate the Fibonacci series
Program-15	Program to emulate a calculator

Mapping

PSO CO	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	H	S	M	H	S
CO2	H	M	H	S	H
CO3	M	S	S	M	M
CO4	M	H	H	L	H

S-Strong; H-High; M-Medium; L-Low

Course Designed by	Verified by HoD	Checked by	Approved by
Name and Signature	Name and Signature	CDC	COE
Name:Dr.S.Niraimathi	Name:M.Rajasenathipathi	Name:	Name:
Signature:	Signature:	Signature:	Signature:

Semester VI

Programme code:	MCA	Programme Title :	MCA	
Course Code:	17PMC639	Title	Batch :	2017
		Big Data Management	Semester	VI
Hrs/Week:	4		Credits:	4

Course Objective

- To know about big data, its architecture and the integration with datawarehouse. Explains the concept of Hadoop and Map reduce functions.
- Gives an idea about virtualization and explains the cloud in the context of Big data.
- Emphasis the Big data best practices and its resources for further improvements

Course Outcomes (CO)

K1	CO1	To remember and recollect the concept of Data base and data mining
K2	CO2	To get the idea of big data and social media
K3	CO3	To understand the big data database and tools
K4	CO4	To analyze the big data methodology with the real world problems

Existing Syllabus

Unit-1

Fundamentals of Big Data: Evolution of Data Management-Managing the data – Big Data – Big data management architecture.

Big Data Types: Structured data – Unstructured Data –Real Time and Non- real time requirements – Big Data together.

Distributed Computing: History of Distributed Computing – Basics of Distributing Computing – Performance.

Unit-2

Big Data Technology Components: Big Data Stack – Redundant Physical Infrastructure – Security Infrastructure – Operational Databases – Organizing Data Services and Tools – Analytical Data Warehouses – Big Data Analytics – Big Data Applications.

Virtualization: Basics of Virtualization – Managing virtualization with Hypervisor – Abstraction and Virtualization – Implementing Virtualization.

Cloud and Big Data: Cloud in the context of Big Data – Cloud Deployment and Delivery models – Cloud as an imperative for big data – Use of cloud for Big data – Providers in the Big Data Cloud Market.

Unit-3

Operational Database: Relational, Non-relational, Key-value Pair, Document, Columnar, Graph, Spatial, polygot Persistence.

MapReduce Fundamentals: Origin of MapReduce- Map Function – Reduce Function – Putting Map and Reduce together – Optimizing Map-ReduceTasks.

Exploring the world of Hadoop: Hadoop – Hadoop Distributed File System – Hadoop map Reduce.

Hadoop Foundation and Ecosystem: Building Big Data Foundations with Hadoop Ecosystems – Managing Resources and Applications with Hadoop YARN – Storing Big Data with HBase – Mining Big Data with Hive – Interacting with Hadoop Ecosystem

Unit-4

Appliances and Big Data Warehouse: Integrating Big Data with Traditional Data Warehouse – Big Data Analysis and Data Datawarehouse – Changing the role of Data Warehouse – Changing Deployment Models to the Big Data Era – Future of Data Warehouse

Defining Big Data Analytics: Using Big Data to get results – Modifying BI products to handle Big Data – Big Data Analytics Examples.

Integrating Data Sources: Identifying the data – Fundamentals of Big Data Integration – Defining Traditional ETL – Understanding ELT – Prioritizing Big Data Quality – Using Hadoop as ETL – Best practices for Data Integration in a Big Data World.

Unit-5

Importance of Big Data to business: Big Data as a Business planning Tool-Adding new Dimensions to the planning cycle – Keeping data analytics in perspective – Getting Started

with the right Foundation – Getting the Big data Strategy started- Planning for Big Data – Transforming Business Processes with Big Data.

Ten Big Data Best Practices – Ten Big Data Resources – Ten Big data do's and don't's.

Books for Study:

- Judith Hurwitz, Alan Nurgent, Dr. Fern Halper, Marcia Kaufman,(2013) “ *Big Data for Dummies* ” ,First Edition,A Wiley Publication

Books for Reference:

- Michael Minelli, Michele Chambers, AmbigaDhiraj,(2013) “*Big Data, Big Analytics – Emerging Business Intelligence and Analytic Trends For Today's Businesses*”, First Edition,A Wiley Publication,
- Strata Conference, Making Data Work,(2013) “*Big Data Now*”,First Edition, Shroff Publication

Mapping

PSO CO	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	M	H	M	H	S
CO2	H	M	M	M	H
CO3	H	M	M	H	M
CO4	M	H	H	H	M

S-Strong; H-High; M-Medium; L-Low

Course Designed by	Verified by HoD	Checked by	Approved by
Name and Signature	Name and Signature	CDC	COE
Name: Dr. E. Rama Devi	Name: Dr. M. Rajasenathipathi	Name:	Name:
Signature:	Signature:	Signature:	Signature:

Programme code:	MCA	Programme Title :	Master of Computer Applications	
Course Code:	17PMC640	Title	Batch :	2017
		Elective IV:Android Programming	Semester	VI
Hrs/Week:	4		Credits:	04

Course Objective

- To understand an expert knowledge in basics of Android Applications.
To Create Activity, Intent modules using android
- To familiarize developing mini projects using android

Course Outcomes (CO)

K1	CO1	To remember the powerful features of android
K2	CO2	To get the idea of Designing and developing User Interfaces for the Android platform.
K3	CO3	To implement and configure Android app development tools
K4	CO4	To analyze user interfaces for the android platform

Existing Syllabus

Unit-1

What is Android-History of Embedded device programming-Open handset alliance and android-Introduction to android-Downloading and installing eclipse-Downloading and installing the android SDK.

Unit-2

Exploring the android SDK-What is the android SDK-Application life cycle-Application: hello world – Creating your first android Projects in Eclipse-Examine the Android-created files.

Unit-3

Using the command-Line tools and the Android Emulator: Creating a Shell activity using the windows CLI-Creating the hello world!, Activity in the windows CLI. Using intents and the phone dialer: What are intents-Using the Dialer-Placing a call from your activity.

Unit-4

Lists, Menus, and Other Views: Building the Activities-Using the menu, using the cell phone's GPS Functionality: using the android Location-Based API-Reading the GPS with the Android Location-Based API.

Unit-5

Application: Find a Friend: Creating a SQLite Database-Creating a Custom Content Provider-Creating the FindA Friend Activity-Running FindA Friend Activity, Android SDK Tool Reference-Emulator commands-Debug Bridge Commands.

Books for Study:

- J.F.DiMarzio, "Android A Programmer's Guide" ,Tata McGraw-Hill, 2nd Edition publication,2010,New Delhi.

Books for Reference:

- Jonathan Stark ,” Building Android Apps With HTML, CSS, And Javascript “, O'Reilly Media, 1 Edition ,September 27, 2010.
- Bill Phillips, Brian Hardy, “Android Programming: The Big Nerd Ranch Guide “, Big Nerd Ranch Guides; 1 Edition ,April 9, 2013.

Mapping

PSO CO	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	S	M	S	L	M
CO2	M	L	H	M	L
CO3	L	M	M	S	M
CO4	M	M	H	H	S

S- Strong; H-High; M-Medium; L-Low

Course Designed by	Verified by HoD	Checked by	Approved by
Name and Signature	Name and Signature	CDC	COE
Name:Dr.M.Rathamani	Name:Dr.M.Rajasenathipathi	Name:	Name:
Signature:	Signature:	Signature:	Signature:

Programme code:	MCA	Programme Title :	Master of Computer Applications	
Course Code:	17PMC641	Title	Batch :	2017
		Main Project	Semester	VI
Hrs/Week:	4		Credits:	18