

‘SRI RAMAKRISHNA MISSION VIDYALAYA COLLEGE OF ARTS AND SCIENCE
(AUTONOMOUS), COIMBATORE – 641 020
B.Sc. COMPUTER SCIENCE (BSA/BSB)
 Under Choice Based Credit System (CBCS) 2016– 2017 onwards
SCHEME OF EXAMINATION

SEMESTER – I									
S.No	COURSE CODE	PART	COURSE TITILE	HRS /WK	CRE DITS	EX AM HRS	MAX MARKS		
							INT	EXT	TOT
01	15UGC1TA1	I	Tamil– I	6	3	3	25	75	100
02	16UGC1EN1	II	English – I	6	3	3	25	75	100
03	13UCS/USC1 CO1	III	Core – 1 Programming in C	4	4	3	25	75	100
04	13UCS/USC1 AL1	III	Allied-1: Mathematics – I	6	5	3	25	75	100
05	13UCS/USC1 CP1	III	Core Practical – 1 Programming Lab in C	6	3	3	40	60	100
06	15UGC1ENS	IV	Environmental Studies	2	2	2	-	75	75
TOTAL – 1				30	20		140	435	575

SEMESTER – II									
S.No	COURSE CODE	PART	COURSE TITILE	HRS/ WK	CRE DITS	EXA M HRS	MAX MARKS		
							INT	EXT	TOT
01	15UGC2TA2	I	Tamil– II	6	3	3	25	75	100
02	16UGC2EN2	II	English – II	6	3	3	25	75	100
04	13UCS/USC2 CO2	III	Core – 2 Object Oriented Programming with C++	4	4	3	25	75	100
05	13UCS/USC2 AL2	III	Allied-2: Mathematics – II	6	5	3	25	75	100
06	13UCS/USC2 CP2	III	Core Practical – 2 Programming Lab in C++	6	3	3	40	60	100
07	16UGC2VAE	IV	Value Education	2	2	2	-	75	75
TOTAL – 2				30	20		140	435	575

SEMESTER – III									
S.No	COURSE CODE	PART	COURSE TITLE	HRS/ WK	CRE DITS	EXAM HRS	MAX MARKS		
							INT	EXT	TOT
01	13UCS/USC3 CO3	III	Core– 3 Data Base Management System	4	4	3	25	75	100
02	16UCS/USC3 CO4	III	Core– 4 .Net Technology –I	5	5	3	25	75	100
03	16UCS/USC3 CO5	III	Core – 5 Data Structures and Algorithms	5	4	3	25	75	100
04	13UCS/USC3 AL3	III	Allied- 3: Accounting and Business Management	6	5	3	25	75	100
05	13UCS/USC3 CP3	III	Core Practical – 3 .Net Technology Lab -I	4	3	3	40	60	100
06	16UCS/USC3 CP4	III	Core Practical – 4 RDBMS Lab	4	3	3	40	60	100
06	16UCS/USC MN1	IV	Non Major Elective – 1 ----- / Basic Tamil – I	2	2	2	-	50	50
TOTAL – 3				30	26		165	485	650

SEMESTER – IV

S.No	COURSE CODE	PART	COURSE TITLE	HRS/ WK	CRED ITS	EXAM HRS	MAX MARKS		
							INT	EXT	TOT
01	16UCS/USC4 CO6	III	Core – 6 Java Programming	6	4	3	25	75	100
02	16UCS/USC4 CO7	III	Core – 7 Computer Organization and Architecture	6	4	3	25	75	100
03	16UCS/USC4 CO8	III	Core – 8 Modern Structured Analysis and Design Techniques	5	3	3	40	60	100
04	13UCS/USC4 AL4	III	Allied 4- Operations Research	6	5	3	25	75	100
05	16UCS/USC4 CP5	III	Core Practical – 5 Java Programming Lab	5	3	3	40	60	100
06	16UCS/USC4 NM2	IV	Non Major Elective - 2: -----/ Basic Tamil – II	2	2	2	-	50	50
07	15UGC4NCC/	V	NSS / NCC / SPORTS		1	2	-	50	50

	4SPO/4NSS								
TOTAL – 4				30	23		155	445	600

SEMESTER – V

S.No	COURSE CODE	PART	COURSE TITLE	HRS /WK	CRE DITS	EXAM HRS	MAX MARKS		
							INT	EXT	TOT
01	16UCS/USC5 CO9	III	Core– 9 Operating System	4	4	3	25	75	100
02	16UCS/USC5 C10	III	Core – 10 Cyber Security	4	4	3	25	75	100
03	16UCS/USC5 C11	III	Core – 11 .Net Technology- II	4	4	3	25	75	100
04	16UCS/USC5 CP6	III	Core Practical – 6 .Net Technology Lab- II	4	4	3	40	60	100
05	16UCS/USC5 CP7	III	Core Practical – 7 Multimedia Lab	5	3	3	40	60	100
06	16UCS/USC5 EL1	III	Elective – I (From Group A)	4	4	3	25	75	100
07	13UCS/USC6P R	III	PROJECT	5					
TOTAL – 5				30	23		180	420	600

SEMESTER – VI

S.No	COURSE CODE	PART	COURSE TITLE	HRS /WK	CRE DITS	EXAM HRS	MAX MARKS		
							INT	EXT	TOT
01	16UCS/USC6C 12	III	Core– 12 Software Engineering	5	5	3	25	75	100
02	16UCS/USC6C 13	III	Core – 13 Web programming	5	5	3	25	75	100
03	16UCS/USC6C 14	III	Core – 14 Communication Networks	5	5	3	25	75	100
04	16UCS/USC6E L2	III	Elective - II (From Group B)	5	5	3	25	75	100
05	16UCS/USC6C P8	III	Core Practical -8 Web Programming Lab	5	3	3	40	60	100
06	13UCS/USC6P R	III	Project Work	5	5		40	60	100
TOTAL – 6				30	28		180	420	600

Electives

Group A:

1. Artificial Intelligence and Soft Computing.
2. Distributed Computing System
3. Management Information System
4. TCP/IP Protocol Suit
5. Mobile Application Development

Group B:

1. **Data Mining and Warehousing**
2. Multimedia Applciations.
3. Software Project Management
4. Unix Internals
5. Cryptography and Network Security

NON MAJOR ELECTIVES:

01	16UEC3NM1	IV	Non Major Elective – 1 Java Programming	2	2	2	-	50	50
02	13UEC4NM2	IV	Non Major Elective – 2 HTML	2	2	2	-	50	50

**SRI RAMAKRISHNA MISSION VIDYALAYA
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For the candidates admitted from academic year 2016 - 2017 onwards under New CBCS

CORE: PROGRAMMING IN C

Year : I

Semester : I

Hours / Week : 4

Subject Code: 13UCS/USC1C01

Credits : 4

UNIT I

Overview of C: Importance of C – Basic Structure of C programs – Executing a ‘C’ Program – Sample Programs;

Constants, Variables and Data Types: Character Set – C tokens – Keywords and Identifiers – Constants – Variables – Data Types – Declaration of Variables – Assigning Values to Variables – Declaring a Variable as Constant.

UNIT II

Operators and Expressions: Arithmetic Operators – Relational Operators – Logical Operators – Assignment Operators – Increment and Decrement Operators – Conditional Operator – Bitwise Operators – Special Operators – Arithmetic Expressions – Evaluation of Expressions – Precedence of Arithmetic Operator – Some Computational Problems – Type Conversions in Expressions – Operator Precedence and Associativity – Mathematical Functions;

Managing Input and Output Operations: Reading a Character – Writing a Character – Formatted Input – Formatted Output.

UNIT III

Decision Making and Branching: Decision Making with IF Statement – Simple IF Statement – The IF ... ELSE Statement – Nesting of IF ... ELSE Statement – The ELSE IF Ladder – The Switch Statement – The ?: Operator – The GOTO Statement;

Decision Making and Looping: The WHILE Statement – The DO Statement – The FOR Statement – Jumps in LOOPS.

UNIT IV

Array: One-dimensional Arrays – Declaration of One-dimensional Arrays – Initialization of One-dimensional Arrays – Two-dimensional Arrays – Initializing Two-dimensional Arrays – Multi-dimensional Arrays;

User-defined Functions: Elements of User-defined Functions – Definition of Functions – Return Values and their Types – Function Calls – Function Declaration – Category of Functions – No Arguments and no Return Values – Arguments with Return Values – No Arguments but Return Multiple Values – Nesting of Functions.

UNIT V

Pointers: Introduction – Understanding pointers – Accessing the Address of a Variable – Declaring Pointer Variables – Initialization of Pointer Variables – Accessing a Variable through its Pointers;

File Management in C: Introduction – Defining and Opening a File – Closing a File – Input /Output Operations on Files – Error Handling During I/O Operations – Random Access to Files – Command Line Arguments.

TEXT BOOK:

1. Programming in ANSI C, Fifth Edition, E. Balagurusamy, Tata McGraw Hill Education Private Limited, New Delhi, 2011.

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Year : I Semester : I
Hours / Week : 6 Subject Code:13UCS/USC1CP1

Credits :3

CORE PRACTICAL: PROGRAMMING LAB IN C

1. Write a C program to find the roots of a quadratic equation. (Use of Arithmetic operators)
2. Write a C program to find the biggest and smallest among three numbers. (Using conditional operator)
3. Write a C program to read and print the formatted integers and characters output and write the status of a character whether it is numeric / alphabet / lower case / upper case / special symbols.
4. Write a C program to accept the integers and print whether it is a palindrome number or not. (Using modulus operator)
5. Write a C program to calculate the salary of a sales representative based on his sales. Bonus and incentives to be offered to him will be based on his total sales. If his sales exceeds Rs. 1,00,000/- follow the particulars of table 1 otherwise table 2. (use of if-else statement)

Table 1

Basic	= Rs. 10,000/-
HRA	= 20% of Basic
DA	= 110% of Basic
Conveyance	= Rs. 500/-
Incentive	= 10% of Sales
Bonus	= Rs. 2000/-

Table 2

Basic	= Rs. 10,000/-
HRA	= 20% of Basic
DA	= 110% of Basic
Conveyance	= Rs. 500/-
Incentive	= 10% of Sales
Bonus	= Rs. 1000/-

6. Write a C program to convert years into months, days, hours, minutes, and seconds. (Using switch-case statement)
7. Write a C program to calculate an Electricity bill by reading starting and ending meter reading. The changes are as follows:

Number of units consumed	Rates in Rs.
Less than 100	1.50
100 – 200	2.50
201 – 500	3.50
500 – 1000	5.00

8. Write a C program to find the given number is Prime or not. (Using while loop statement)
9. Write a C program to accept N integer numbers and sort them by using 1D Array.
10. Write a C program to print Matrix Multiplication. (Using 2D Array)
11. Write a C program to find NCR value using User-defined functions. (Function with argument with return values)
12. Write a C program to calculate interest for the given principal amount (P), number of years (N) and rate of interest (R) using User-defined function.
13. Write a C program for sorting of strings using pointers.
14. Write a C program for character oriented read/write operations on a file. (Using getc and putc)
[Note: Enter the Input data via the keyboard character by character to the file "INPUT". The end of the data is indicated by entering an EOF character. Then read the content and display it on the screen]
15. Write a C Program for counting tabs, number of lines, characters and blank spaces in a file.

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CORE : OBJECT ORIENTED PROGRAMMING WITH C++

Year : I

Semester : II

Hours / Week : 4

Subject Code : 13UCS/USC2C02

Credits : 4

UNIT I

Object Oriented Programming Paradigm: Basic concepts — Benefits — Application — Structure of C++ program — Basic data types — User Defined Data types — Derived data types — Manipulators — Type cast operator — Conversions — Control structures

UNIT II

Functions: Function Prototyping — Call by reference — return by reference — Inline function — Default arguments.

Class & Objects: Specifying a class — Define member function — Arrays within a class - Memory allocation — Arrays of Object — Objects as function Arguments — Constructors Parameterized constructor — Copy Constructor — Dynamic constructor — Destructors.

UNIT III

Operator Overloading & type conversion: Define Operators Overloading — Overloading unary operators — Binary operators — Type conversion.

Inheritance: Defining derived class — Single inheritance — Multi level inheritance — Multiple inheritance — Hierarchical inheritance — Hybrid inheritance — Constructors in derived class.

UNIT IV

Pointers, Virtual functions and polymorphism: Pointer to Objects — this pointer — virtual functions — Pure Virtual Functions.

Files: Opening and Closing a File — Detecting end of file — File pointers and their manipulations — Command — line arguments.

UNIT V

Templates: Class templates — Function templates — Overloading of template function — Member function templates.

Exception Handling: Basics — Exception handling mechanism — Throwing mechanism — Catching mechanism — Specify Exceptions.

TEXT BOOK:

1. Object oriented programming with C++, E. Balagurusamy, Tata McGraw Hill Education Private Limited, N.Delhi, 5th Edition, 2012.

REFERENCE BOOK

Robert Lafore, Object oriented programming in C++, 4th Edition, Pearson, 9th Impression, 2013.

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CORE PRACTICAL : PROGRAMMING LAB IN C++

Year : I
Hours / Week : 6
Credit:3

Semester : II
Subject Code : 13UCS/USC2CP2

- 1) To implement MANIPULATORS using C++ program
- 2) To Illustrate a CLASS using C++ program
- 3) To implement CONSTRUCTOR using C++ program
- 4) To implement FUNCTION OVERLOADING – Type 1 using C++ program
- 5) To implement FUNCTION OVERLOADING – Type 2 using C++ program
- 6) To implement SIMPLE INHERITANCE using C++ program
- 7) To implement MULTILEVEL INHERITANCE using C++ program
- 8) To implement MULTIPLE INHERITANCE using C++ program
- 9) To implement OPERATOR OVERLOADING using C++ program
- 10) To implement VIRTUAL FUNCTIONS using C++ program
- 11) To implement: a). Writing an Object, to Disk, and
b). Reading an Object, from Disk using C++ program
- 12) To implement EXCEPTION HANDLING using C++ program

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CORE: DATABASE MANAGEMENT SYSTEM

Year : II
Hours / Week : 4
Credits : 4

Semester : III
Subject Code :13UCS/USC3C03

UNIT I:

Introduction to Database Systems: – Database System Applications, Database Systems Versus File Systems – View of Data – Data Models – Database Languages – Database Users and Administrators, Transaction Management, Database System Structure, Application Architectures, History of Database Systems. (Chapter 1, Page No.:1 - 21)-
Entity-Relationship Model: - Basic Concepts – Mapping Constraints – Keys – Design Issues - Entity Relationship Diagram – Weak Entity Sets (Chapter 2, Page No. 27-49) – Design of an E-R Database Schema – Reduction of an E-R Schema to Tables. (Chapter 2, Page No.: 56-68)

UNIT II:

Relational Model: – Structure of Relational Databases – The Relational Algebra – Extended Relational Algebra Operations – Modification of the Database – Views – The Tuple Relational Calculus, The Domain Relational Calculus. (Chapter 3, Page No.: 79 – 126)

UNIT III:

SQL :- Basic Structure - Set Operations – Aggregate functions – Nested Queries – Derived Relations – Views – Modification of the database (Chapter 4, Page No.: 135-163) – Data Definition Language – Embedded SQL (Chapter 4, Page No.: 168-175) – Other SQL Features (Chapter 4, Page No.: 180-182).

UNIT IV:

Relational Database Design: - First Normal Form – Pitfalls in Relational Database Design – Normalization Using Functional Dependencies - Decomposition (Chapter 7, Page No.: 257 -279) – Normalization Using Multivalued Dependencies – Normalization Using Join Dependencies. (Chapter 7, Page No.: 289 - 293)

UNIT V:

Object Oriented Databases: – The Object Oriented Data Model – Object Oriented Languages – Persistent Programming Languages – Persistent C++ Systems.(Chapter 8, Page No.: 307 -330)- Object Relational Databases: – Nested Relations – Complex Types – Inheritance – Reference Types - Querying with Complex Types – Functions and Procedures – Comparison of Object Oriented and Object Relational Databases. (Chapter 8, Page No.: 335-357)

TEXT BOOKS:

1. A.Silberschatz, H.Korth and S.Sudarsan, Database System Concepts, TATA McGraw Hill Inc., 2002, Fourth Edition. (All Units)

REFERENCE BOOKS:

1. Bipin.C.Desai, An Introduction to Database System, West Publishing Company, 2004.
2. C.J.Date, An Introduction to Database Systems, Addition – Wesley, 2007, eighth edition

SRI RAMAKRISHNA MISSION VIDYALAYA
COLLEGE OF ARTS & SCIENCE- COIMBATORE - 641 020

CORE: .NET TECHNOLOGY -I

Year : II

Semester : III

Hours / Week : 5

Subject Code : 16UCS/USC3C04

Credits : 4

UNIT I

Getting started in Visual Basic .Net: Starting Visual Basic .Net- Creating a shortcut to start VB.Net- What is IDE- Opening and closing Windows and toolbars- Opening an Existing project- Using the Auto hide facility- Docking and undocking the windows- placing a window at a suitable location- Resizing a Window – Creating a Useful application- Placing the controls on a form- Selecting a form and the controls- Resizing the form and the controls – Relocating the controls – using the properties window- Setting the properties of form and controls – using the solution explorer – Setting the startup object- Writing an Event procedure.

UNIT II

Setting properties using the Properties window: Classification of properties – Various properties of form- Various properties of Label. Setting Properties Using Event Procedures: Introduction- Setting the text property of label and button- Auto list members and parameters information- Comments – Case sensitivity – Indent sensitivity – Line break for a Line of code- Correcting errors in the code- Setting run time properties: Project event procedure

UNIT III

Visual basic .Net programming Languages: Variables and data types – Hungarian naming convention for data types – Displaying the output on the screen- Dealing with variables – Building the project: My Variables – Addition of Numbers – Dealing with strings – Arithmetic operators – Using various data types – Hexadecimal, Decimal, Octal, and binary system of numbers – Textbox control – Radio button control – Programming statements: If... Then and If.. Then...End If- Programming Statement: If... Then...Else...End If- Constants

Visual basic .Net programming Languages: Logical operators – Checkbox Control- Iteration Statement – Beware of Infinite Loop – Do while loop Statement- Do loop While Statement- Do until loop statement- Do loop Until statement- For Next Statement- Nesting of the For loops – Arrays.

UNIT IV

Visual basic .Net programming Languages: Using the import statement – Know the functions – The msgbox functions – Function call and arguments – The project “Message box tour” – The text editor toolbar- The input box function- Comparison Operators- List box Control- Programming Statement: Select Case- Concept of Computer- Control and flow charts – Programming design language.

Menus and Dialog Boxes: Basic elements of menu- Generic procedure of creating menus – Creating a simple menu application – Enhancing a simple menu application – Modifying the existing menu – Assigning and Removing shortcut keys – Dynamically growing menus – Pop-up menu – A brief introduction to files – Using dialog-boxes.

UNIT V

Using Built-in Functions: Build-in functions – Mathematical functions – Strings handling functions – Date and Time handling functions – Data type inspection functions –Data type conversion functions – Function format() – Financial functions – Miscellaneous functions – Option statements – Built-in functions Demonstration Application – Seeking Built-in help.

Working with Files: Introduction to Files - Classification of Files – Generic Procedure of processing files – Handling files and folders using functions – Handling files and folders using classes – Directory class – File class – File and Folder manipulation Application – File processing using functions – File processing using streams – Project file processing .

TEXT BOOK:

1. Visual Basic.Net, ShirishChavan, Dorling Kindersley (India) Pvt. Ltd, Third Impression, 2009

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CORE: DATA STRUCTURES AND ALGORITHMS

Year : II
Hours / Week : 5
Credits : 5

Semester : III
Subject Code : 13UCS/USC3C05

UNIT I

Introduction: Over view — Creation and analyses of programs — Arrays: Basics — Representation of arrays — Sparse Matrices — Stacks: Basics — Functions — Evaluation of expressions— Multiple Stacks — Queues: Basics — Functions — Circular Queues — Multiple Queues.

UNIT II

Linked Lists: Single Linked Lists — Linked Stacks and Queues — Storage Pool — Applications — Polynomial Addition — Equivalence Relations — Double Linked Lists: Dynamic Storage Management — Garbage collection and Compaction.

UNIT III

Trees: Basic Terminology — Binary Trees — Representation and Traversals — Threaded Binary trees — In order traversal — Binary tree representation of Trees — Sets — Union, Find algorithms — Graphs: Transitive Closure — Warshall 's Algorithm — Shortest path problem: Dijkstra's algorithm — Minimum Spanning Trees: Prim's algorithm.

UNIT IV

Searching Techniques: Binary, Sequential and Fibonacci searches — Sorting Techniques: Internal sorting with tapes and disks — balanced merge sort — Polyphase merge sort.

UNIT V

Symbol Tables: Static tree and dynamic tree implementations — Hash tables — Index Techniques: Tree indexing — B trees — Trie indexing — Linked File organizations: File Organisations — Sequential, ISAM, Random — Multilists — Inverted Files — Cellular Partitions.

TEXT BOOKS:

1. Fundamentals of Data Structures, Ellis Horowitz and Sartaj Sahni, Computer Science Press, 2002 (UNITS — I, II, III First Paragraph, IV, V).
2. Data Structures Using Pascal, Tanenbaum A. M. and Augestein M. J., Prentice hall, 2nd edition, 1996 (UNIT — III Second Paragraph).

REFERENCE BOOKS:

1. Data Structures through C, Yashwant Kanetkar, BPB publications, 2003.
2. Data Structures — Algorithms & Applications in C++, Sartaj Sahni, McGraw-Hill, 1998.
3. Data Structures & Algorithm Analysis in C, Mark Allen Weiss, Addison Wesley, 1999.

**SRI RAMAKRISHNA MISSION VIDYALAYA
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CORE PRACTICAL: .NET TECHNOLOGY LAB –I

Year : III

Semester : III

Hours / Week : 4

Subject Code : 13UCS/USC3CP3

Credits : 3

LIST OF PRACTICALS

1. Write a vb-net program to create a note pad with find &replace option?
2. Write a vb-net program to create a word pad using rich textbox?
3. Write a vb-net program to create an MDI form?
4. Write a vb-net program to create an explore a file (tree view list view split container)?
5. Write a vb-net program to validate a text box using inheritance?
6. Write a vb-net program to print ID card using graphics?
7. Write a Vb-net program to draw the Geometric figures in the form?
8. Write a Vb-net program to set the Progress bar using timers?
9. Write a Vb-net program to trace the mouse?
10. Write a Vb-net program to handle user Events?
11. Write a vb-net program to create a travel plan?
12. Write a vb-net program to perform various arithmetic operations using calculator?
13. Write a vb-net program to add information's using Data grid control?
14. Write a vb-net program to conduct an examination using timers?
15. Write a vb-net program to create a help provider, error provider for user controls?
16. Write a vb- net program to show notify Icons with context menus?
17. Prepare a pay roll for the employees using vb-net ?
18. Write a Vb-net program to set alarm property in a form using a timer?

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CORE PRACTICAL: RDBMS LAB

Year : II
Hours / Week : 4
Credits : 3

Semester : III
Subject Code:16UCS/USC3CP4

1. Write a Oracle query creating a table and inserting and updating data in a table.
2. Write a Oracle query delete single record, all records and structure
3. Write a Oracle query illustrate security features of oracle.
4. Write a Oracle query creation of multiple types of Indexes.
5. Write a Oracle query creating a sequence
6. Write a program to illustrate exemption handling.
7. Write a program for creation of trigger.
8. Write a program to retrieve records from a table.
9. Write a program to demonstrate procedures.
10. Write a program to demonstrate cursors.
11. Write a program to display multiple tables using view.
12. Write a program to generate a report.

SRI RAMAKRISHNA MISSION VIDYALAYA
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CORE: JAVA PROGRAMMING

Year : II
Hours / Week : 6

Semester : IV
Subject Code:16UCS/USC4C06

Credits : 4

Unit I

Introduction to java- Introduction to Classes- Inheritance Concepts- Packages and Interfaces: Packages – Access protection Importing packages – interfaces. Exception Handling: Fundamentals – Exception types – Using Try and Catch – nested Try – statements – throw, throws, finally. (Page Number: 129-246)

Unit II

Multithreaded programming: Thread model – Creating a thread, creating multiple threads – Using Alive () and join () – synchronization – Inter threaded communication. String Handling: String constructors – string operations – character extraction – string comparison – searching – modification – string buffer.(Page Number: 273-297,347-376)

Unit III

I/O: File – Stream classes – Byte streams – character streams – serialization – (Page Number: 537-585) AWT: Controls- Layout manager-Menus (page Number: 735-797)

Unit IV

Applet: Basics – Architecture – Passing parameters to Applets – Skeleton – Simple Applet – Event handling: Event model –Event class –Event listener interface. (Page Number: 627-684)

Unit V

Java Beans: - Advantages – Application building tools – Using Bean Developer kit (BDK) - JAR files – Developing simple Bean using the BDK. (Page Number: 886-898)

RMI: Basics – TCP/IP client sockets – inet Address – URL – Datagram's.(Page Number: 587-629)

Text Book:

1. Herbert Schildt, The Complete Reference -java 2, TATAMcGraw Hill, 2002, Fifth Edition

Reference Books:

1. Patrick Naughton, The JAVA Hand Book, TATAMcGraw Hill, 1997
2. Harley Haim, The internet computer reference, TATAMcGraw Hill,1998, Second Edition

**SRI RAMAKRISHNA MISSION VIDYALAYA
COLLEGE OF ARTS & SCIENCE- COIMBATORE - 641 020**

CORE: COMPUTER ORGANIZATION AND ARCHITECTURE

Year : II
Hours / Week : 6

Semester : IV
Subject Code :16UCS/USC4C07

Credits : 4

UNIT I

Central Processor Organization: ALU — Stack organization Instruction formats — Addressing Modes - Data transfer and manipulation — program control program interrupt — parallel processing — pipeline — memory interleaving.

UNIT II

Input/output Organization: peripheral devices — I/O Bus and interface modules — micro processor interface isolated and memory mapped I/O — asynchronous data transfer — handshaking Direct memory access.

UNIT III

Priority interrupts — parallel priority interrupt - I/O processor CPU — IOP communication INTEL 8089 I/O processor — multiprocessor system Organization.

UNIT IV

Arithmetic processor design — comparison and subtraction of unsigned binary numbers — Addition and subtraction algorithm — Multiplication algorithm — Division algorithm — Processor configuration — Design of control — Micro programmed calculator.

UNIT V

Memory Organization — Microcomputer memory — Associative memory — Virtual memory Cache memory — Memory management hardware.

TEXT BOOK:

1. Computer System Architecture, Morris Mano, Eighth Printing (Second Edition), October 1990.

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CORE: MODERN STRUCTURED ANALYSIS AND DESIGN TECHNIQUES

Year : II
Hours / Week : 5

Semester : IV
Subject Code : 16UCS/USC4C08

Credits : 4

UNIT I REQUIREMENTS MODELING:

Introduction- Overview of object oriented system development – Object basics- The unified Process- Modelling concepts- Modelling as a design technique- Analysis and modelling- UML diagrams- Use case modelling- Class modelling – State modelling- Interaction modelling

Object constraint language- Inception- Evolutionary Requirements – Domain models- System sequence diagrams – Operation contracts

UNIT II DESIGN AND PRINCIPLE OF DESIGN

Requirements to design – Design patterns- Logical architecture- Package diagram- Design patterns- Model, View, Control pattern- Detailed design- Object design with GRASP pattern – Detailed class diagram with visibility

UNIT III MAPPING TO CODE

Mapping design to code- Test driven development and refactoring- UML tools and UML as blueprint.

UNIT IV MORE PATTERNS

More patterns- Analysis update- Objects with responsibilities- applying design patterns- Architectural Analysis- Logical Architecture refinement – Package design- Persistence framework with patterns

UNIT V SOAD:

Key Components of SOA – Service Oriented Enterprise Applications: Consideration, Patterns – Service -Oriented Analysis & Design (SOAD): Principles, design of Services: Activity, Data, Client, business process, CLOUD – Technologies for SOA: REST, SOAP.

TEXT BOOKS:

1. Michael Blaha and James Rumbaugh, Object oriented modeling and design with UML, Pearson, 2nd Edition ,2012
2. Craig Larman, Applying UML and patterns- An introduction to object oriented analysis and design and iterative development”, Pearson Education, 3rd Edition ,2016
3. Shankar Kambhampaty, ‘SOA for Enterprise & Cloud Applications’, Wiley India, 2nd Edition, 2012.

REFERENCE BOOKS:

1. ERICH GAMMA, Richard Helm, Ralph Johnson, John Ulissides, Design patterns: “Elements of Reusable object oriented software Engineering, Pearson Education, 2016.
2. Alan Shalloway, James R.Trott, Design patterns Explained: A new perspective on object oriented design, Pearson Education, 2010.

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CORE PRACTICAL: JAVA PROGRAMMING LAB

**Year : II
Hours / Week : 5**

**Semester : IV
Subject Code: 16UCS/USC4CP5**

Credits : 3

1. Write a java program to create a package.
2. Write a java program to implement an Interface.
3. Write a java program to handle all Exceptions?
4. Write a java program for creating multiple threads.
5. Write a java program for searching and sorting strings using String class.
6. Write a java program for the following string operations using StringBuffer class: a) append, b) insert, c) reverse, 4) delete and 5) replace.
7. Write a java program to demonstrate File methods.
8. Write a java program to use FileInputStream class to read bytes from a file for Byte streams.
9. Write a java program to use FileReader and FileWriter classes to read the contents of a file for Character streams.
10. Write a java program using check boxes AWT control.
11. Write a java program using List AWT control.
12. Write a java Applet program for displaying the Human face.
13. Write a java program for handling keyboard events.
14. Write a java program for finding IP Address and Local host name using InetAddress class.
15. Write a java program to pass messages between client and server.

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For candidates admitted from academic year 2013-2014 onwards under New CBCS.

CORE: OPERATING SYSTEM

Year : III
Hours / Week : 4
Credits : 4

Semester : V
Subject Code : 16UCS/USC5C09

Unit I

INTRODUCTION: What is an Operating System?-Mainframe Systems-Desktop Systems-Multiprocessor Systems-Distributed Systems-Clustered System-Real-Time Systems-Handheld Systems. Operating-System Structures:-System Components-Operating-System Services-System Calls-System Programs-System Structure-Virtual Machines.(Pages 3-19, 55-80)

Unit II

PROCESS MANAGEMENT: Process Concept-Process Scheduling-Operations on Processes-Cooperating Processes-Inter process Communication. CPU Scheduling:-Basic Concepts-Scheduling Criteria- Scheduling Algorithms-Multiple-Processor Scheduling-Real-Time Scheduling. Deadlocks:-System Model-Deadlock Characterization-Methods for Handling Deadlocks-Deadlock Prevention- Deadlock Avoidance- Deadlock Detection-Recovery from Deadlock. (Pages 95 – 109, 151-170, 243 - 264)

Unit III

STORAGE MANAGEMENT: Memory Management:-Background-Swapping-Contiguous Memory Allocation-Paging-Segmentation- Segmentation with Paging. Virtual Memory:-Background-Demand Paging-Process Creation-Page Replacement-Allocation of Frames-Thrashing. (Pages 273-309, 317 – 348)

Unit IV

File-System Implementation:-File-System Structure- File-System Implementation- Directory Implementation- Allocation Methods-Free-Space Management. Mass-Storage Structure:-Disk Structure-Disk Management-Swap-Space Management-RAID Structure-Disk Attachment-Stable-Storage Implementation-Tertiary-Storage Structure. (Pages 411 – 430, 491 – 516)

Unit V - CASE STUDIES:

Windows2000: History-DesignPrinciples-SystemComponents-Environmental Subsystems-File System-Networking-Programmer Interface. Windows XP: History-Design Principles-System Components-Environmental Subsystems-File System-Networking-Programmer Interface. (Pages 743-780, 789 – 839)

TEXT BOOK :

1. SILBERSCHATZ, GALVIN, GAGNE, OPERATING SYSTEM CONCEPTS, Wiley India Edition (sixth edition), 2007

REFERENCE BOOKS:

1. DeitelDeitelChoffnes, Operating Systems, Pearson Education (third edition), 2003.
2. Stuart E. Madnick, John J.Donovan, Operating Systems, Tata McGraw Hill (third edition),2003

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CORE: CYBER SECURITY

Year : III

Semester : V

Hours / Week : 4

Subject Code : 16UCS/USC5C10

Credits : 4

Unit I

Foundations of Cryptography and Security :- Ciphers and Secret Message, Security Attacks and Services. Mathematical Tools for Cryptography : Substitutions and Permutations, Modular Arithmetic, Euclid's Algorithm, Finite Fields, Polynomial Arithmetic. Design Principle of Block ciphers: Theory of Block Cipher Design. Cipher Network Structures, DES and Triple DES, Modes of Operation (ECB, CBC, OFB, CFB) , Strength of DES

Unit II

Block Cipher Algorithms:- IDEA, CAST, Blowfish , Twofish , Rijndael (AES). Pseudo Random Numbers and stream ciphers: Pseudo random sequences, Linear Congruential Generators, Cryptographic Generators, Design of Stream Cipher , RC4, RC5.

Unit III

Public Key Cryptography:- Prime Numbers and Testing for Primality, Factoring Large Numbers, Discrete Logarithms RSA, Diffie- Hellman, ElGamal , Introduction of Elliptic curve Cryptosystems Key Management , Key Exchange Algorithms, Public – Key Cryptography Standards. Hashes and Message Digests: Message Authentication, MD5, SHA-1, RIPEMD, HMAC.

Unit IV

Digital Signatures, Certificates, and Standards:- Digital Signature Standard (DSS and DSA), Public key Infrastructure, Digital Certificates and Basics of PKCS Standards. Authentication: Kerberos V 4 and V 5, X.509 Authentication Service. Electronic Mail Security : Pretty Good Privacy (PGP) , S /MIME, X.400 . IP and Web Security Protocols: IPsec and Virtual Private Networks, Secure Sockets and Transport Layer (SSL and TLS).

Unit V

System Security: - Computer Virus, Firewall and Design Principles, Cryptography and Network Security. Electronic Commerce Security: Electronic Payment Systems, Secure Electronic Transaction (SET), Protocols (CyberCash, iKey) Ecash (DigiCash), Smart Card Based Systems.

TEXT BOOKS:

1. Cryptography and Network Security, William Stallings, 4th Edition, PHI.

REFERENCE BOOKS:

Applied Cryptography: Protocols & Algorithms, Schneier & Bruce, MGH

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CORE: .NET TECHNOLOGY –II

Year : III

Semester : V

Hours / Week : 4

Subject Code : 16UCS/USC5C11

Credits : 4

UNIT I

Evaluation of .Net- Overview of .Net Framework- Exploring Visual studio IDE- Basic IDE operations.

C# Fundamentals: Identifiers, Keywords, Variables, and constants, Expressions and operators- Selection statements: if, Switch-loops: While, do While, For,foreach-Jump Statement: Goto, Break, Continue.

UNIT II

Exception handling: Try..Catch..Finally and throw statements, Checking and Unchecking, Exploring name spaces, Classes and objects, Structs.

OOPS: Encapsulation, Inheritance, Polymorphism, Abstraction and Interfaces. Using Pointers, Delegates and Events.

Dynamic Data type and Dynamic Language Runtime.

UNIT III

Windows Forms: Creating and Customizing

WPF: Controls – Properties and Events

Multithreading: Creating and Scheduling a thread – Synchronizing Threads – Thread Pooling.

File Handling: Working with files – File Compression.

UNIT IV

ADO.Net: Understanding SQL and ADO.Net Entity framework – Data binding in windows forms – Data binding in ASP.Net Applications.

UNIT V

ASP.Net: Web services: Architecture – Properties – ASP.Net AJAX – Security.

Windows services: Various class and installation. Deploying windows and web applications.

TEXT BOOK:

1.C#.Net Programming Black book, Dreamtech Press, 2011.

REFERENCE BOOK:

1. E.Balagurusamy, Programming in C#:A Primer, 3rd Edition, TATA McGraw Hill Education Pvt Limited, New Delhi, 2012.

2. Kevin Hoffman. Microsoft Visual C#, Pearson Education, 2006.

3.V.K.Jain, The Complete Guide to C# Programming, Dreamtech Press, 2001.

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CORE PRACTICAL: .NET TECHNOLOGY LAB –II

Year : III

Semester : V

Hours / Week : 4

Subject Code : 16UCS/USC5CP6

Credits : 4

1. Admission to a professional course is subject to the following conditions

a) Marks in Mathematics ≥ 60

b) Marks in Physics ≥ 50

c) Marks in Chemistry ≥ 40

d) Total in all 3 Subjects ≥ 200

(or) Total in Mathematics and physics ≥ 50

Given the marks in 3 subjects, write a program to process the applications, to list the eligible candidates.

1. A cloth showroom has announced the following seasonal discounts, on purchase of items

Purchase Amount (Rs)	Discount	
	Mill Cloth	Handloom Items
0-100	-	5%
101-200	5	7.5%
201-300	7.5%	10%
Above 300	10%	15%

Write a Program to compute the net amount to be paid by a customer.

2. a). Write a Program to reverse the digits of the given number.

a) Write a program that will read a string and rewrite it, in alphabetical order

3. a) Write a program to print the given output

```
1
2  2
3  3  3
4  4  4  4
5  5  5  5  5
```

b) Design a structure type data using a suitable name, for an inventory record containing item code, item name, item cost, and total items available.

5. The exam results of 100 students are tabulated as follows :

Roll No	Subject 1	Subject 2	Subject 3

Write a program to read the data & determine the following

- Total marks obtained by each student
- The highest marks in each subject and the roll number of the student who secured it
- The student who obtained the highest total marks

6. Write a program that will read a name from the keyboard and display it on the screen. The program should throw an exception, when the length of the name is more than 15 characters. Design your own exception mechanism.

7. Define a person class with 3 data members: age, name and sex

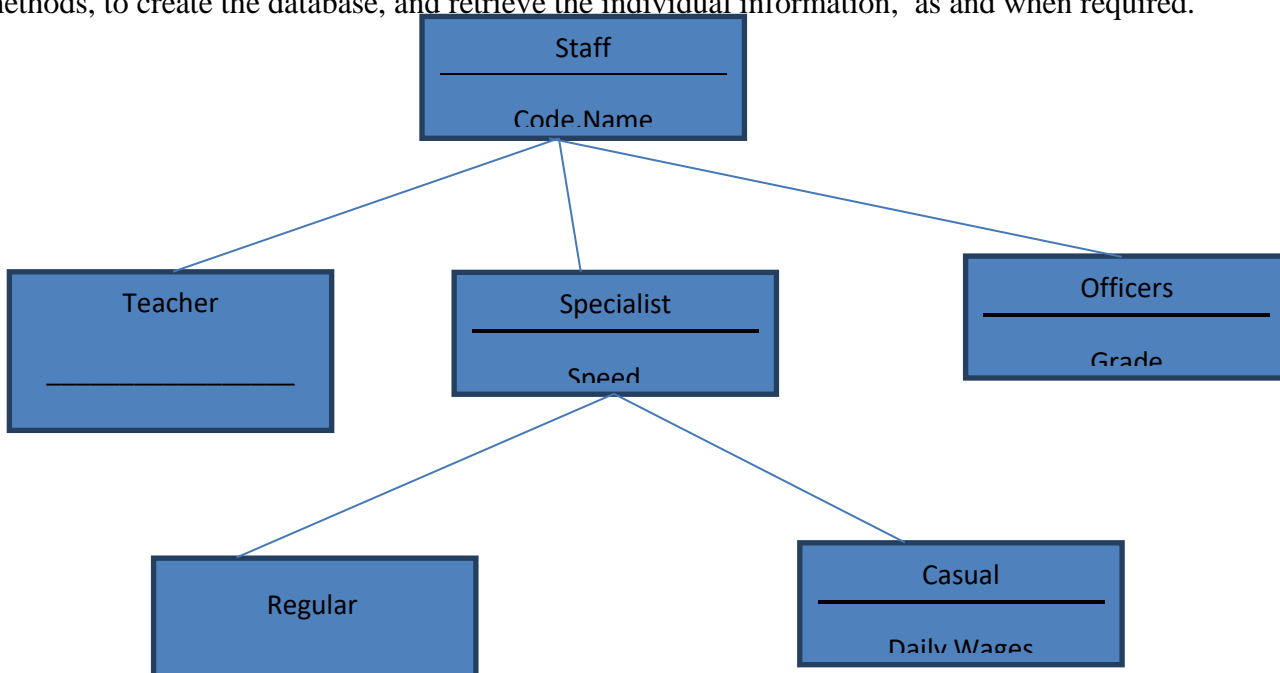
i) Derive a class called employee from the person that adds a data member code, to store employee code.

ii) Derive another class called specialist from employee.

iii) Add a method to each derived class, to display the information about what is this

Write a driver program, to generate an array of 3 ordinary employees and another array of 3 specialist and display the information about them. Also display the information of the specialist, by calling the method inherited, from employee class.

8. An educational institution wishes to maintain a database, of its employees. The database is divided into a number of classes. Minimum information required for each class, is shown in figure, specify all the classes and define the methods, to create the database, and retrieve the individual information, as and when required.



9. Write a program, to implement, scheduling of a thread using the “priority” Property.
10. Write a program to implement, synchronization of threads, using the “Sleep” and “Join” Methods.
11. Write a program to read and display the tables of data

Item name	Item code	Prize
Fan	67135	1234.50
Motor	865342	5786.70

The item name and item code must be left justified and the prize should be right justified.

12. Create and customize the login form, main detail form and processing form for the “Flight reservation system”.

13. Create and customize the login form, main detail form and processing form for the “Customer relationship system”.

14. Create and customize the login form, main detail form and processing form for the “Sales order processing system”.

15. Assuming “Flight reservation system” as a **windows application**, establish various SQL and ADO.Net commands for ensuring database updating and security.

16. Assuming “Customer relationship system” as a **windows application**, establish various SQL and ADO.Net commands, for ensuring database updating and security.

17. Assuming “Sales order processing system” as a **windows application**, establish various SQL and ADO.Net commands, for ensuring database updating and security.

18. Assuming “Flight reservation system” as a **web based application**

Create a login form, with user id and password text box controls and submit command button, upon submission of form, the application redirect to another new page, with login and other information.

19. Assuming “Customer relationship system” as a **web based application**

Create a login form, with user id and password text box controls and submit command button, upon submission of form, the application redirect to another new page, with login and other information.

20. Assuming “Sales order processing system” as a **web based application**

Create a login form, with user id and password text box controls and submit command button, upon submission of form, the application redirect to another new page, with login and other information.

CORE PRACTICAL: MULTIMEDIA LAB

Year : III
Hours / Week : 5
Credits : 3

Semester : V
Subject Code : 16UCS/USC5CP7

Core Practical VII

Multimedia Lab

Effect for the students admitted from 2016- 2017 onwards

Photoshop

- 1) Create an invitation design using Photoshop.
- 2) Create a layer animation using Photoshop.
- 3) Apply the filter effect in image using Photoshop.
- 4) Create a web index page using Photoshop.
- 5) Create a logo design by Photoshop.

Flash

- 1) Create a natural scenery using flash.
- 2) How to create a glossy button using flash?
- 3) Apply the filter effect in image or font using Flash.
- 4) Create a Text animation using Flash.
- 5) Create a movie clip animation using Flash.

Corel Draw

- 1) Create a logo design using Corel draw?
- 2) Create a banner design using Corel draw?
- 3) Create a corporate ID card design using Corel draw?
- 4) Create a wedding Card design using Corel draw?
- 5) Create a 3D Text effect using Corel draw?

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CORE: SOFTWARE ENGINEERING

Year : III
Hours / Week : 5

Semester : VI
Subject Code : 16UCS/USC6C12

Credits : 5

UNIT I

Introduction — software engineering the software process software process models — the linear sequential model — the proto type model — the RAD model — evolutionary software process models — component based development — the formal methods model — fourth generation techniques.

UNIT II

Requirements analysis — requirements elicitation for software — analysis principles -- software prototyping specification — the software requirements — specification — specification review.

UNIT III

Software design and software engineering — the design process — design principles — design concepts — effective modular design — design heuristics for effective modularity — the design model — design documentation.

UNIT IV

Quality concepts. — the quality movement — software quality assurance — software reviews — formal technical reviews — formal approaches to SQA — statistical software quality assurance — software reliability — mistake proofing for software — the ISO 9000 quality standards — the SQA plan.

UNIT V

Software testing fundamentals — test case design - white box testing — basis path testing — control structure testing — black box testing — unit testing — Integration testing — validation testing — system testing.

TEXT BOOK:

1. Software Engineering a Practical Approach, Roger S Pressman, McGraw Hill International Edition, Fifth Edition, 2001.

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CORE: WEB PROGRAMMING

Year : III

Semester : VI

Hours / Week : 5

Subject Code : 16UCS/USC6C13

Credits : 5

XML

Unit I

XML Document: Hello XML- Creating, saving, loading XML document- Attributes –Empty Element tags- XSL. Document type definition: DTD files- Internal and External DTDs- Element Declaration.

Unit II

CSS layouts: CSS units- The Display property- Box properties- Size – Positioning – CSS Text styles: Fonts- Color- Text- Backgrounds.

Web Services: WSDL, XML Schema and SOAP.

PHP

Unit III

Introduction to PHP: Creating first PHP page – variables- constants-types- Operators and Flow Control: Operators- Conditional Statements- Looping - arrays.

Unit IV

Reading Data in Web Pages: Handling Text Fields, Text Area, Checkboxes, Radio Buttons, List Boxes, Password Controls, Hidden Controls, Image Maps, File Uploads, Buttons.

Unit V

Working with Databases: Creating MYSQL Database, New Table, Putting Data into the New Database, Accessing the Database in PHP, Inserting, Deleting, Updating the Data items into a database using PHP.

TEXT BOOKS:

1. Ellistte Rusty Harold, XML1.1. Bible, IDG Books Pvt Ltd,3rd Edition, 2007. (Unit I,II)
2. Steven Holzner, The Complete Reference PHP, McGrawHill Education Private Limited, 2010. (Unit III,IV& V)
3. Sandeep Chatterjee, James Webber, Developing Enterprise Web Services, PEARSON, 2008.

REFERENCE BOOKS:

1. Heather Williamson, The Complete Reference XML, TATAMcGraw Hill, Fifth Edition, 2002.
2. VikramVaswani, A Beginner's Guide PHP, Tata McGraw Hill, Fifth Edition, 2011.

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CORE: COMMUNICATION NETWORKS

Year : III

Semester : VI

Hours / Week : 5

Subject Code :16UCS/USC6C14

Credits : 5

UNIT I

Uses of Computer Networks — Applications of networks —, network structure — network architectures — ISO reference model example networks.

UNIT II

Transmission and multiplexing — analog transmission — digital transmission — X.2 1 digital interface — circuit, packet switching — terminal. handling — telephone, wireless and satellite communication systems.

UNIT III

Data link layer: Elementary data link protocols — sliding window protocols protocols efficiency and verification.

Network layer: Virtual circuits and datagram's — routing algorithms — congestion.

UNIT IV

Transport and Session layers: Transport protocol design issues — interconnection of packets switching networks — session layer design issues teammate procedure call.

UNIT V

Introduction to cyber crime and law: Cyber crimes, Types of Cyber Crime, Hacking, Attack vectors, Cyberspace and Criminal Behavior, Clarification of terms, Traditional problems associated with Computer Crime, Introduction to incident response, Digital forensics, Computer language, Network language, Realms of the cyber world, A brief history of the internet, Recognizing and defining computer crime, Contemporary crimes, Computers as targets, Contaminants and destruction of data, Indian IT ACT 2000.

TEXT BOOK:

1. Andrew S. Tanenbaum, "Computer networks", Prentice Hall of India Pvt. Ltd, Edition 5, 2015.
2. Nina Godbole and Sunit Belpure, Cyber security understanding cyber crimes, Computer forensics and legal perspectives, Publication Wiley India, 2009.

REFERENCE BOOKS:

1. Vyles D. Black, Data communication networks and distributed processing.
2. Mike Shema, Anti-Hacker Tool kit, Publication Mc Graw Hill, 4th Edition, 2014.

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Year : III
Hours / Week : 5
Credits : 3

Semester : VI
Subject Code :16UCS/USC6CP8

CORE PRACTICAL: WEB PROGRAMMING LAB

1. Write a HTML5 program to create student information form to get the following details.
 - a. Regno
 - b. Student Name
 - c. Date of Birth
 - d. Age
 - e. Address
 - f. Favorite Color
2. Write a HTML with Bootstrap program to create employee information form with following details.
 - a. Employee No
 - b. Employee Name
 - c. Designation
 - d. Salary
 - e. Date of Joining
 - f. Experience
3. Write a XML program to create a student resume using CSS.
4. Write a XML program to create and display hotel information (catalog) using CSS.
5. Write a XML program to demonstrate the use of DTD.
6. Write a XML program to create a table and display it using XSL
7. Write a XML program to create hotel breakfast menu information using XSL.
8. Write a program to perform arithmetic operations using HTML5 and PHP.
9. Write a PHP program to generate Fibonacci Series.
10. Write a program to find greatest of two numbers using HTML5 and PHP.
11. Write a PHP program to create and write some text in a file using file directory functions.
12. Write a PHP program to create and save staff information using MySQL database.
13. Write a PHP program to view staff information from MySQL database.

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ELECTIVE: ARTIFICIAL INTELLIGENCE AND SOFT COMPUTING

Year : III
Hours / Week : 4

Semester : V
Subject Code : 16UCS/USC5EL1

Credits : 4

UNIT I

Introduction — definition of AI, Task domains, underlying Assumption, Criteria for success, State space (Water Jug Problem), Production systems, problem characteristics, Production system characteristics.

UNIT II

Heuristic search techniques — Generate and Test, Hill — Climbing, Best — First search, Problem Production, Constraint satisfaction, Means — end analysis.

UNIT III

Knowledge representation-Non Formal Methods: Production rules, Semantic Nets, Frames & Scripts-Formal Methods: Unification and Resolution

UNIT IV

Neural Network-Supervised Network- Back propagation Network-Unsupervised Network: ART(Adaptive Resonance Theory)-Simple Genetic Algorithm - Operators: Cross over and mutation.

UNIT V

FUZZY LOGIC - Introduction-Membership functions-Type 1 and Type 2 systems.

Applications: Expert systems, Vision, Natural Language Processing, Learning

TEXT BOOKS:

1. Elaine Rich and Kevin knight, Artificial Intelligence, Tata McGraw Hill, 29th Reprint, 2002.
2. Freeman Skapura, Neural Networks Fundamentals, Pearson Education, 2011
3. Introduction to Genetic Algorithms, Goldberg, Pearson Education, 1989.
4. H.J. Zimmermann, Fuzzy set theory and its applications , 4th Edition, 2nd Reprint , Springer 2010.

REFERENCE BOOK:

1. Dan.W.Patterson, Introduction to Artificial Intelligence and Expert systems, pHI,1990
2. P.H.Winston, Artificial Intelligence, Second Edition Addison Wesley,1984
3. E.Charniak, D.McDermott, Introduction to Artificial Intelligence, Addison Wesley,1985

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ELECTIVE: DISTRIBUTED COMPUTING SYSTEMS

Year : III
Hours / Week : 4

Semester : V
Subject Code : 16UCS/USC5EL1

Credits : 4

UNIT I

Introduction: Goals – Types of Distributed systems – Architectural styles – System Architecture.
Architectures Versus Middleware – Self Management in distributed systems - Processes – Threads –
Virtualization – Clients – Servers – Code Migration.

UNIT II

Communication: Fundamentals - Remote Procedure Call – Stream oriented communication –
Message oriented communication – Multicast communication. Naming – Names, Identifiers, and addresses –
Flat Naming - Structured Naming – Attribute based Naming.

UNIT III

**Synchronization: Clock Synchronization – Logical clocks - Mutual Exclusion – Global positioning of nodes -
Election Algorithms. Consistency and Replication: Introduction – Data centric consistency models – Client
centric consistency models – Replica management – Consistency protocols.**

UNIT IV

Fault Tolerance: Introduction – Process resilience – Reliable client server communication – Reliable group
communication – Distributed commit -Recovery Security – Introduction – Secure channels – Access control – Security
management.

UNIT V

Distributed File Systems – Distributed web based systems – Distributed object based systems.

TEXT BOOK

1. Andrew S. Tanenbaum and Maarten Van Steen, “Distributed Systems – Principles and Paradigms”, Prentice-Hall of India, Pvt. Ltd, Second edition, 2008.

REFERENCES

1. Pradeep K Sinha, “Distributed Operating Systems, Prentice-Hall of India, New Delhi, 2001.
2. Jean Dollimore, Tim Kindberg, George Coulouris, “Distributed Systems -Concepts and Design”, Pearson Education, Fourth edition, 2005.
3. M.L. Liu, “Distributed Computing Principles and Applications”, Pearson Education, 2004.

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ELECTIVE: MANAGEMENT INFORMATION SYSTEM

Year : III

Semester : V

Hours / Week : 4

Subject Code : 16UCS/USC5EL1

Credits : 4

UNIT I

Introduction

Data, Information, Intelligence, Information Technology, Information System, evolution, types based on functions and hierarchy, System Analyst – Role, Functions.

UNIT II

Systems Analysis And Design

SDLC, SSLC, Systems Analysis and System Design, Tools – DFD – ER – Object modeling, DBMS – RDBMS – OODBMS.

UNIT III

Information System

Financial, Marketing, Personnel, Production, Materials Information System, DSS, EIS, KMS, GIS, International Information System.

UNIT IV

Security And Control

Security, Testing, Error detection, Controls, IS Vulnerability, Computer Crimes, Securing the Web, Intranets and Wireless Networks, Software Audit, Ethics in IT.

UNIT V

New It Initiatives

e- business, e-governance, ERP, SCM, e-CRM, Datawarehousing and Data Mining, Business Intelligence, Pervasive Computing, CMM.

TEXT BOOKS

1. Robert Schultheis and Mary Summer, Management Information Systems – The Managers View, Tata McGraw Hill, 2008.
2. Kenneth C. Laudon and Jane Price Laudon, Management Information Systems – Managing the digital firm, PHI Learning / Pearson Education, PHI, Asia, 2002.

REFERENCES

1. Gordon Davis, Management Information System : Conceptual Foundations, Structure and Development, Tata McGraw Hill, 2000.
2. Haag, Cummings and McCubrey, Management Information Systems for the Information Age, McGraw Hill, 2005.
3. Turban, McLean and Wetherbe, Information Technology for Management – Transforming Organisations in the Digital Economy, John Wiley, 2007.
4. Raymond McLeod and Jr. George P. Schell, Management Information Systems, Pearson Education, 2007.

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ELECTIVE :TCP/IP PROTOCOL SUIT

Year : III
Hours / Week : 4
Credits : 4

Semester : V
Subject Code : 16UCS/USC5EL1

Unit I:

Introduction and Overview. Comparison of OSI Model and TCP/IP model. Networking Technologies: LANS, WANS, Connecting Devices. Internetworking concept and Architectural model. Internet Backbones, NAP, ISP's, RFC's, Internet Standards.

Unit II:

Internet Addresses: IP address classes, subnet mask, CIDR, ARP, RARP, Internet Protocol, Routing IP Datagrams, ICMP and IGMP.

Unit III:

UDP, TCP, Sockets and socket Programming, Routing in Internet, Routing protocols- RIP, OSPF and BGP. Introduction to Multicasting and Multicast routing.

Unit IV:

Host Configuration: BOOTP, DHCP; Services: Domain Name System, FTP, TFTP and Electronic Mail: SMTP, MIME, IMAP, POP.

Unit V:

Network Management: SNMP, WWW: HTTP, Mobile IP. Multimedia : RTP, RTCP.

Middlewares : RPC, RMI. Introduction to IPv6 and ICMPv6, Internet Security: IPsec, PGP, Firewalls, SSL.

Books:

1. Internetworking and TCP/IP: Principles, Protocols and Architectures, Douglas Comer, Pearson Education. TCP/IP Protocol suite, Behrouz A. Forouzan, Third Edition, TMH.

2. Computer Networking – A Top-Down Approach Featuring the Internet, James F. Kurose, Keith W. Ross, Pearson Education, Asia. • Computer Networks: A systems approach by Larry L. Peterson and Bruce S. Davie, 3rd Edition, Morgan Kaufmann Publishers

Reference Book:

1. Stevens W. R. TCP/IP Illustrated, volume 1,2,3, Pearson education.
2. Book For Practical: • “Hands-On Networking with Internet Technologies” by Douglas E. Comer, Pearson Education, Asia, 2002.

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ELECTIVE: MOBILE APPLICATION DEVELOPMENT

Year : III Semester : V
Hours / Week : 4 Subject Code : 16UCS/USC5EL1
Credits : 4

Unit – I

Introduction – Enabling concepts for mobile and personal communication- Present, Past and Future Mobile Communication.

Cellular concepts and implementation: Cellular concepts-multiple access technologies for cellular system- Cellular system operation and planning general principles. **Chapter 1 (1-11) ,Chapter 2 (15-20)**

Unit – II

Introducing Android: Before we get started – Advantages of android – Preparing SDK tools to download – Android development IDE – Java, XML and how android works – Android application framework – Screen layout design – User Interface Design – Graphics and animation Design – Interactivity – Content providers – Intent and intent filters. **(1-19)**

Unit – III

Setting up your android development environment – Installing Java, Eclipse and Android – Setting up AVDs and Smart Phone – Understanding Java SE and the Dalvik Virtual Machine – The directory structure of an android project – Leveraging android XML – Using your android application resources – The AndroidManifest.xml file – Creating your first android application. **(21-85)**

Android application components – **Android Intent Objects:** Messaging for Components – **Android Manifest XML:** Declaring Your Components – Android View Hierarchies – Defining Screen Layouts: Using XML. **(115-160)**

Unit – IV

UI Design: Buttons, Menus and Dialogs – Using Android UI Elements (Widgets) – Adding an Image Button to Your Layout – Adding a TextView Widget to Your Layout – Adding an Image – Using Menus in Android – Creating the Menu Structure with XML – Defining Menu Item Strings – Inflating the Menu Structure via Java – Running the Application in the Android Emulator – Making the Menu Work – Adding Dialogs – Using Custom Dialog Subclasses – Displaying an Alert Dialog. **(163-207)**

Unit - V

Adding Interactivity: Handling UI Events – An Overview of UI Events in Android – HandlineonClick Events – **Android Touchscreen Events:** onTouch – **Android Right-click Equivalent:** onLongClick – **Key Event Listeners:** onKeyUp and onKeyDown – **Context Menus in Android:** onCreateContextMenu. **(235-266)**

Understanding Content Providers: An Overview of Android Content Providers – Defining a Content Provider – Working with a Database.

TEXT BOOKS:

1. Raja Pandya, Mobile and Personal Communication Services and Systems, Prentice Hall of India, 2000.**(Chapter – 1)**
2. Wallace Jackson, Android Apps for Absolute Beginners, 2nd Edition, APress, 2013. **(Chapter – 2)**

REFERENCE BOOKS:

1. Shawn Van Every “Pro Android Media: Developing Graphics, Music, Video, and Rich Media Apps for Smartphones and Tablets ”
2. <http://spoken-tutorial.org/>

**SRI RAMAKRISHNA MISSION VIDYALAYA
COLLEGE OF ARTS & SCIENCE- COIMBATORE - 641 020**

ELECTIVE: DATA MINING AND WAREHOUSING

Year :III

Semester : VI

Hours / Week :5

Subject Code : 16UCS/USC6EL2

Credits : 5

Unit I

Expanding universe of data – production factor – computer systems that can learn – data mining – data mining versus query tools – data mining in marketing – practical application. (Chapter:1, Page No.:1-10). Learning – Self Learning Computer Systems – machine learning and the methodology of science – concept learning. (Chapter:2, Page No.:11-22)

Unit II

Data warehouse – need- designing decision support systems – integration with data mining-Client/Server and data warehousing–multi-processing machines – cost justification. (Chapter:3, Page No.:25-36)

Unit III

Knowledge discovery process – data selection – cleaning – enrichment – coding – data mining – preliminary analysis of the data set using traditional query tools – visualization techniques – likelihood and distance – OLAP tools – K-nearest neighbor – Decision trees – Association rules – Neural networks – Genetic algorithms – Reporting. (Chapter:4, Page No.:37-78)

Unit IV

Different forms of knowledge – Getting started – Data Selection – Cleaning – Enrichment – Coding – Data mining - Reporting – KDD environment – Ten golden rules. (Chapter:5, Page No.:79-93)

Unit V

Customer Profiling – Predicting bid behavior of pilots – Discovering foreign key relationships-Results. (Chapter:6, Page No.:95-110) Learning as compression of data sets – The information content of message – Noise and redundancy – significance of noise – Fuzzy databases – The traditional theory of the relational database – from relations to tables – from keys to statistical development Dependencies – Denormalization – Data Mining Primitives. (Chapter:7, Page No.:111-126)

TEXT BOOK

1. Peter Adrians and DOLF Zantinge, Data Mining, Addison Wesley, 2002, Fourth Edition (All Units)

REFERENCE BOOK:

K.P.Soman, ShyamDivakar, V.Ajay, Insight into Data Mining (Theory and Practice), Prentice Hall of India, 2006, Second Edition.

**SRI RAMAKRISHNA MISSION VIDYALAYA
COLLEGE OF ARTS & SCIENCE- COIMBATORE - 641 020**

ELECTIVE: MULTIMEDIA APPLIATIONS

Year :III

Semester : VI

Hours / Week :5

Subject Code : 16UCS/USC6EL2

Credits : 5

Unit I

Point-Plotting techniques-r Line drawing displays – Two dimensional Transformations: Transformation principles – Concatenation – Matrix representation – Clipping and Windowing: A Line clipping algorithm – Midpoint subdivision – Polygon clipping – Viewing transformation – Windowing transformations.

Unit II

Graphical Input Devices – Graphical Input Techniques Positioning techniques – Pointing and selection – Inking and painting – On Line character recognition – Raster graphics fundamentals : Representing a Raster Image – Scan converting line drawings – Displaying characters Three dimensional transformations and Perspective: Transformations – Three dimensional clipping – Homogeneous coordinate representations projective transformations.

Unit III

Definition – Multimedia Hardware – Multimedia Software – Multimedia Networking – Multimedia Applications – Multimedia Standards – Text Elements of text – tet technology – Fonts – Graphics Elements of graphics – Pictures and images – Raster images – Vector images – Images and Color – Bitmap, Vector, Compressed Formats – hypertext – Hyper picture – Various CD Formats.

Unit IV

Audio: Natural sound – Digital audio – Calculating the digital audio data size – Digital audio systems – Digital Representation of Sound – Time domain representation of sound – Transformation of digital sound – Video : Analog video – Digital video – Calculating the digital video data size – video file formats.

Unit V

Digital video and Image Compression: Video compression techniques –JPEG image compression standard – MPEG video compression standard. Photoshop: File types – Tool box – Importing and Exporting images – Image mode Rotate canvas – Extract – Layers – Feather – Extract –Layers – Feather – Filters – Zooming images – Navigator – Color – Styles – Channels.

TEXT BOOKS:

1. William M. Newman and Robert F Sproull, Principles of Computer Graphics, Tata McGraw Hill Company Ltd.
2. Multimedia Making it work, Toy Vaughn. 2002.
3. John F Koegel Buford, Multimedia Systems, Addison Wesley, 2002.
4. Mastering in Photoshop, 2002.

**SRI RAMAKRISHNA MISSION VIDYALAYA
COLLEGE OF ARTS & SCIENCE- COIMBATORE - 641 020**

ELECTIVE: SOFTWARE PROJECT MANAGEMENT

Year :III

Semester : VI

Hours / Week :5

Subject Code : 16UCS/USC6EL2

Credits : 5

UNIT I

Introduction to Software Project Management - Project Definition – Contract Management – Activities Covered By Software Project Management – Overview Of Project Planning – Stepwise Project Planning.

UNIT II

Project Evaluation Strategic Assessment – Technical Assessment – Cost Benefit Analysis –Cash Flow Forecasting – Cost Benefit Evaluation Techniques – Risk Evaluation.

UNIT III

Activity Planning Objectives – Project Schedule – Sequencing and Scheduling Activities –Network Planning Models – Forward Pass – Backward Pass – Activity Float – Shortening Project Duration – Activity on Arrow Networks – Risk Management – Nature Of Risk – Types Of Risk – Managing Risk – Hazard Identification – Hazard Analysis – Risk Planning And Control.

UNIT IV

Monitoring and Control Creating Framework – Collecting The Data – Visualizing Progress – Cost Monitoring – Earned Value – Prioritizing Monitoring – Getting Project Back To Target – Change Control – Managing Contracts – Introduction – Types Of Contract – Stages In Contract Placement – Typical Terms Of A Contract – Contract Management – Acceptance.

UNIT V

Managing People and Organizing Teams Introduction – Understanding Behavior – Organizational Behavior: A Background – Selecting The Right Person For The Job – Instruction In The Best Methods – Motivation – The Old man – Hackman Job Characteristics Model – Working In Groups – Becoming A Team –Decision Making – Leadership – Organizational Structures – Stress –Health And Safety – Case Studies.

TEXT BOOK

1. Bob Hughes, Mikecotterell, “Software Project Management”, Third Edition, Tata McGraw Hill, 2004.

REFERENCES

1. Ramesh, Gopalaswamy, "Managing Global Projects", Tata McGraw Hill, 2001.
2. Royce, “Software Project Management”, Pearson Education, 1999.
3. Jalote, “Software Project Management in Practice”, Pearson Education, 2002.

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ELECTIVE: UNIX INTERNALS

Year : III

Semester : VI

Hours / Week : 5

Subject Code : 16UCS/USC6EL2

Credits : 5

UNIT I GENERAL OVERVIEW OF THE SYSTEM

History – System structure – User perspective – Operating system services – Assumptions about hardware. Introduction to the Kernel : Architecture of the UNIX operating system – Introduction to system concepts – Kernel data structures – System administration – Summary and Preview.

UNIT II BUFFER CACHE

Buffer headers – Structure of the buffer pool – Advantages and disadvantages of the buffer cache. Internal representation of files : Inodes – Structure of a regular file – Directories – Conversion of a path name to an Inode – Super block – Other file types.

UNIT III SYSTEM CALLS FOR FILE SYSTEM

Open – Read – Write – File and record locking – Adjusting the position of file I/O – LSEEK – Close – File creation – Creation of special files – Pipes – Dup – Mounting and unmounting file systems

UNIT IV THE STRUCTURE OF PROCESSES

Process states and transitions – Layout of system memory – The context of a process – Saving the context of a process. Process Control: Process creation – Signals – Process termination – Awaiting process termination – Invoking other programs – The shell – System boot and the INIT process.

UNIT V PROCESS SCHEDULING AND MEMORY MANAGEMENT POLICIES

Process Scheduling – Memory Management Policies : Swapping – A hybrid system with swapping and demand paging. The I/O Subsystem : Driver Interfaces – Disk Drivers – Terminal Drivers.

TEXT BOOK

1. Maurice J. Bach, “The Design of the Unix Operating System”, Prentice Hall of India, 2004.

REFERENCE

1. Vahalia, “Unix Internals: The New Frontiers”, Pearson Education Inc, 2003.

**SRI RAMAKRISHNA MISSION VIDYALAYA
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ELECTIVE: CRYPTOGRAPHY AND NETWORK SECURITY

Year : III
Hours / Week : 5
Credits : 5

Semester : VI
Subject Code : 16UCS/USC6EL2

UNIT I

INTRODUCTION: The need for security-security approaches-principles of security-Plain Text and Cipher Text-substitution and Transposition Techniques-Encryption and Decryption-Symmetric and Asymmetric Cryptography-Stenography-key range and key size-types of attacks

UNIT II

SYMMETRIC KEY CRYPTOGRAPHIC ALGORITHMS: Algorithm types and modes-overview of symmetric key cryptography-DES-IDEA-RC5-BLOWFISH-AES-Differential and Linear Cryptanalysis.

UNIT III

ASYMMETRIC KEY CRYPTOGRAPHIC ALGORITHMS: Overview of asymmetric key cryptography- RSA algorithm-symmetric and asymmetric key cryptography together-digital signatures-knapsack algorithm-some other algorithms.

PUBLIC KEY INFRASTRUCTURE: Introduction-Digital certificates- Private Key management-The PKIX model-Public Key Cryptography Standards- XML, PKI and Security

UNIT IV

INTERNET SECURITY PROTOCOLS: Basic concepts-SSL-SHTTP-TSP-SET-SSL versus SET- 3D secure protocol-Electronic money-Email security-WAP security-security in GSM

USER AUTHENTICATION MECHANISMS: Introduction-Authentication basics-passwords authentication tokens-certificate based authentication-biometrics authentication-Kerberos-SSO approaches

UNIT V

PRACTICAL IMPLEMENTATIONS OF CRYPTOGRAPHY/SECURITY: Cryptographic solutions using Java-Cryptographic solutions using Microsoft-cryptographic toolkits-security and operating systems

NETWORK SECURITY: Brief Introduction to TCP/IP- firewalls-IP security-Virtual Private Networks case studies on cryptography and security.

Text Book:

Cryptography and Network security, AtulKahate, Tata McGraw-Hill Pub company Ltd., New Delhi

REFERENCE BOOKS:

1) Network Security Private Communication in a public world, Charlie Kaufman, Radia Perlman & Mike Speciner, Prentice Hall of India Private Ltd., New Delhi

2) Network Security Essentials Applications and Standards, William Stallings, Pearson Education, New Delhi

3) Network Security: The Complete Reference by Roberta Bragg, Mark Phodes-Ousley, Keith Strassberg Tata Mcgraw-Hill

Programme :B.ScComputer Science

Course Code:
13UCS/USC6CPR

CourseTitle : Core : Project Work

Year :III

Semester :VI

Hour/Week :5

Credits :5

The Final Year Students are assigned to the project Supervisor and they are asked to submit an individual project report at the end semester. The Broader areas of the project are website creation, order processing, Billing Software, Multimedia, Artificial Intelligence, and Machine Learning based projects.

The student has to approach the nearby companies to get approval from the company to undergo his project work for the period of 8 to 9 months.

The students have to submit the project Completion Letter from the organization.

The project work done by the student is periodically reviewed.

Programme: Computer Science

Course Code: 13UCS/USC4AL4

Course: ALLIED:OPERATIONS RESEARCH

Hours / week: 6

Year: II

Semester: IV

Credits: 5

UNIT I

(16 Hours)

Linear Programming Problem: Introduction – Mathematical formulation of L.P.P. - **Graphical solution method** – Simplex method – Method of penalties/ Big-M method – Two phase method. (Chapter 2,3& 4, Page No. 39 - 113)

UNIT II

(14 Hours)

Transportation problem: Introduction - **finding initial basic feasible solution** – moving towards optimality – the transportation algorithm. (Chapter 10, Page No. 247-281)

Assignment problem: Method for solving an assignment problem –Variation of assignment problem – Traveling salesman problem – degeneracy. (Chapter 11, Page No. 295-324)

UNIT III

(16 Hours)

Queueing theory: Introduction - Queueing system – Characteristics of the Queueing system – Operating characteristics of a Queueing system - Classification of queues – Poisson queues- (M/M/1) : (∞ /FIFO) , (M/M/1) : (N/FIFO) , (M/M/C) : (∞ /FIFO) , (M/M/C) : (N/FIFO). (Chapter 21, Page No. 589-621)

UNIT IV

(16 Hours)

Inventory: Introduction – Inventory control– Cost associated with inventories – **Economic lot size problem** – Problems of EOQ with shortage allowed – Purchase inventory problem with price breaks. (Chapter 19, Page No. 507-538)

Replacement problem: replacement of items that deteriorates with time – replacement of items that fail completely. (Chapter 18, Page No. 477-494)

UNIT V

(13 Hours)

Networking scheduling by PERT/CPM: Introduction – Basic concepts - Critical path method – pert calculations – **pert algorithm** – construction of network – critical path analysis - **statistical considerations in PERT** . (Chapter 25, Page No. 763-784)

Book for study:

KantiSwarup, P.K. Gupta, Man Mohan, Operations Research, Sultan Chand & Sons, 2007, Thirteen Edition.

Books for reference:

Prof V.Sundaresan, K.S. Ganapathy Subramanian, K.Ganesan, Resource Management Techniques, A.R.Publications, 2004, Second Edition.

Handy A.Taha, Operations Research, CollierMacmillan, Third Edition.

Programme : B.Sc., Mathematics.

Course Title : ELECTIVE PRACTICAL: WEB PROGRAMMING AND C

Course Code :13UMA6EP1

Year :ThirdYear

Semester :VI

Hours/Week:2

Credits :3

1. Solving Quadratic equation.
2. Matrix Multiplication.
3. Mean and Standard Deviation.
4. Alphabetical order of names.
5. Descending and Ascending order numbers.
6. Electricity Bill Preparation.
7. Evaluation of Sin and Cos Series.
8. To Generate Fibonacci Series.
9. Calculation of NCR Values.
10. Biggest and Smallest number in the Array.
11. Write a HTML Program to format the text using all suitable HTML tags
12. Write a HTML Program to include the image in the webpage using suitable HTML tags
13. Write a HTML Program to include a picture as a background image with suitable HTML tags.
14. Write a HTML Program to demonstrate heading tags
15. Write a HTML Program to draw a table containing the semester marks of the student
16. Write a HTML Program to demonstrate frames
17. Write a HTML Program to demonstrate forms

Programme : B.Sc., Mathematics.

Course Title : ELECTIVE: INTRODUCTION TO C

Course Code : 13UMA6EL2

Year :ThirdYear

Semester : VI

Hours/Week:4

Credits :4

Unit – I

Overview of C: Introduction – Importance of C – Sample C programs – Basicstructure of C programs – Programming style – Executing a ‘C’ program.

Constants, Variables and Data types: Introduction – Character set – C tokens – Keywords and Identifiers – Constant – Variables – Data types – Declaration ofvariables – Assigning values to variables – Defining symbolic constants.

Unit-II

Operators and Expression : Introduction – Arithmetic of operators – Relationaloperators and Logical operators – Assignment operators – Increment and Decrementoperators – Special operators – Arithmetic expressions – Evaluation of expressions –Precedence of Arithmeticoperators – Some computational problems – Typeconversions in expressions – operator Precedence and Associativity – Mathematical functions.

Unit – III

Decision making and branching: Introduction to Decision making – Decisionmaking with IF statement – Simple IF statement – The IF ELSE statement – Nestingof IF...ELSE statements – The ELSE IF ladder – The Switch statement – The ?:operator – The GOTO statement.Decision making and looping: Introduction, the WHILE statement, the DOstatement, jumps in loops.

Unit – IV

Arrays: Introduction to arrays – One-dimensional arrays – Two-dimensional arrays – Multi- dimensional arrays.User-Defined Functions: Introduction to User-defined functions – Need for userdefined functions -Recursion.

Unit –V

Structures and Unions: Introduction to Structures definition – Accessing structuremembers – Structure initialization – Unions – Size of structures.Pointers: Introduction to Pointers.Problems: Standard Deviation – Mean and Median – Matrix multiplication – Solvingquadratic equations – Generating Fibonacci series – Preparing Electricity bill.

Books for Study:

1. Jogamohan Medak and ParthPratimGogoi, Basics of C Programming, Kindle Edition, 2018.
2. Kamthane, Programming in C, Kindle Edition,2019.
3. Balagurusamy.E, Programming in ANSIC, McGraw Hill, 6th Edition,2012.

Programme : B.Com Co-operation

Subject Code :16UCO5EP1

Course Title : Elective- Practical

Semester : V

Credits : 4

Hours / Week : 5

Year : Third Year

ELECTIVE PRACTICAL: COMPUTER APPLICATIONS IN BUSINESS LAB

MS – WORD

1. Preparation of Bio-Data
2. Letters to various sectors (Banking, Insurance and etc.)
3. Preparation of Agenda, Minutes, Circular letters
4. Mail Merge
5. Designing a News paper

MS-EXEL

1. Preparation of payrolls
2. Preparation of Invoice
3. Preparation of Stock details
4. Business Analysis using various charts
5. Use of financial functions

MS-ACCESS

1. Store data in a table
2. Retrieve data from a table
3. Sorting, searching a table
4. Viewing data using forms
5. Using SQL commands
6. Preparation of Business reports

MS-POWER POINT

1. Preparation of the advertisement
2. Introducing the product in the market
3. Business preparation with animation and transition effects
4. Display Board
5. Audio and Video Presentation

INTERNET

1. E-mail Creation
2. Ordering a Product Through Online

Books Recommended:

1. R. Saravanakumar, R. Parameswaran, T. Jayalakshmi, “A text book of Information Technology”, S.Chand& Company Ltd., 2003.
2. R.K. Taxali, “PC software for Windows 98 Made Simple”, Tata McGraw Hill, 2001.
3. Alexis Leon, Mathews Leon, “Introduction to Computers”, Leon TechWorld.
4. Microsoft Office – The Complete Reference, Tata McGraw Hill.

B.Sc Electronics and Communication Systems

NME: JAVA PROGRAMMING

Course Code:16UEC3NM1

Year :II

Semester :III

Hours/Week:2

Credits :2

UNIT 1

Fundamentals of Object – Oriented Programming: Introduction – Object Oriented Paradigm – Basic Concepts of Object – oriented Programming – Constants, Variables and Data Types : Introduction – Constants – Variables – Data Types – Declaration of variables – Giving Values to Variables – Operators – Arithmetic operators – Relational Operators – Logical Operators – Assignment Operators – Increment and Decrement Operators – Conditional Operators – Bitwise Operators – Special Operators.

UNIT II

Decision Making and Branching – Introduction – Decision Making with if statement – simple if statement – the if ...else statement – nesting of if ...else statements – the else if ladder – the switch statement – the ?: operator – decision making and looping : Introduction – the while statement – the do statement – the for statement – jumps in loops – labeled loops.

UNIT III

Arrays : Introduction – One dimensional array – creating an array – Two dimensional arrays – Inheritance Basic concepts – packages basic concepts – Multithreaded programming.

Reference Book

1. E.Balagurusamy, Programming with Java: A primer , 2010, Fourth Edition.

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COIMBATORE – 641 020**

B.Sc Electronics and Communication Systems

NME: HTML

Course Code:13UEC4NM2

Year :II

Semester :IV

Hours/Week:2

Credits :2

Unit I

Introduction to HTML document – Text formatting – Using lists to organize data with tables – Table layout – Adding Images

Unit II

Framesets – Hyperlinks and Anchors – Form Elements – Input Elements – Button Elements – Label Elements – Select and option Element – Defining web page appearance – Simple style sheets

Unit III

HTML properties- styles- HTML tags – Hypertext transfer protocol- Links and frames – HTML Elements- List and Links- Webpage Layout- Sample Programs.

TEXT BOOK:

1. Richdarnell et al., HTML – 4 Unleashed, Techmedia, 1999 Second Edition, (Unit I, II)