

S.N.R. SONS COLLEGE (Autonomous)

(Affiliated to Bharathiar University)

(Re-Accredited with 'A' Grade by NAAC)



(An ISO 9001:2008 Certified Institution) S.N.R. College Road, Coimbatore-641 006, Tamil Nadu, India. Phone: (0422) 2562788 Fax: (0422) 2560387 Website: www.snrsonscollege.org

"Scheme of Examination along with Distribution of Marks and Credits" CBCS PATTERN

UNDER GRADUATE PROGRAMMES

COMPUTER SCIENCE Degree

(For the students admitted during the academic year 2016 - 2017 and onwards)

Part	Study Components and Course Title with course code	Instruction al Hours/ Week	CIA	CE	Total	Credit
	SEMESTER I					
I	Language: 16T01 Tamil – I / 16H01 Hindi – I / 16F01 French – I / 16M01 Malayalam – I /16A01 Arabic – I	5	30	70	100	3
II	16E01 English – I	5	30	70	100	3
Ш	16CSC01 CORE I – Digital Fundamentals and Computer Organization	5	30	70	100	4
III	16ITC01 CORE II -Programming in C	5	30	70	100	4
ш	16CSC02 CORE III Practical-1 : Office Automation Lab	4	30	70	100	3
щ	1 16ITC01 CORE IV Practical-2 : Programming in C Lab		30	70	100	3
ш	II Allied I: Mathematics -I 16CS101 Numerical And Statistical Methods		30	70	100	4
IV	16ES01 Environmental Studies	2	100	-	100	1
IV	16CPE 01 PACE 1		-	100	100**	1
IV	16CSJC1 JOC		-	-	-	1s
	SEMESTER II					
I Language: 16T02 Tamil – II / 16H02 Hindi – II / 16F02 French – II/ 16M02 Malayalam – II /16A02 Arabic –II		5	30	70	100	3
П	16E02 English- II	5	30	70	100	3
ш	16CAC02 CORE V – Object Oriented Programming with C++	5	30	70	100	5
Ш	16CAC01 CORE VI - Data Structures	5	30	70	100	5
ПŢ	16CAC04 CORE VII Practical-3 : C++ Lab	4	30	70	100	3
Ш	16CAC03 CORE VIII Practical-4 : Data structures Lab using C	4	30	70	100	3
ш	Allied II :Mathematics-II 16CS201 Discrete Mathematics	5	30	70	100	4
IV	16VE01 Value Education	2	100	-	100**	1
IV	16CPE02 PACE II			100	100**	1
IV	16CSJC2 JOC					15

	SEMESTER III					
Ш	16ITC05 CORE IX Computer Networks	6	30	70	100	5
ш	16CS301 CORE X Practical-5 : Visual basic Programming Lab	5	30	70	100	3
III	16CS302 CORE XI Practical-6 : Web Technology Lab	4	30	70	100	3
Ш	OPEN ELECTIVE I	4	30	70	100	3
III	16MATC05 Allied III: Operation Research	5	30	70	100	
III	16CS303 Skill Based Course - I: Web Technology	5	30	70	100	3
	16BT01 Basic Tamil I / 16AT01 Advanced Tamil 1\$\$			1.0	100*	Is
IV	16CPE03 PACE III		-	100	100**	1
IV	16CSJC3 JOC		-		100	1.
	SEMESTER IV	_	-	-		15
111	16 ITC03 CORE XII – RDBMS	5	30	70	100	5
III	16ITC04 CORE XIII- Practical - 7 : RDBMS Lab	4	30	70	100	3
ш	16CS401 CORE XIV Practical - 8 : .Net Programming Lab	4	30	70	100	3
Ш	Elective- I 16ITC06/16CSE01/16CSE02	5	30	70	100	4
III	Allied IV: 16CS402 Business Accounting	5	30	70	100	4
IV	16CS403 Skill Based Course – II : .Net programming	5	30	70	100	3
	16BT02 Basic Tamil II / 16AT02 Advanced Tamil IISS				100*	ls
IV	16CPE04 PACE IV		-	100	100**	2
IV	16CSJC4 JOC		-	COMP.		Is
	SEMESTER V	-		-		-
111	16CSC03 CORE XV - Java Programming	6	30	70	100	5
ш	16CSC04 CORE XVI Practical-9 : Java Programming Lab	4	30	70	100	4
mŧ	16CSC05 CORE XVII Practical-10 : PHP Programming Lab	4	30	70	100	3
111	OPEN ELECTIVE II	5	30	70	100	3
IV	16CSC06 Skill Based Course – 3 : PHP Programming	6	30	70	100	3
v	16CPE05 PACE V			100	100**	2
V	16CSJC5 JOC					1s
	SEMESTER VI					
Ш	16CAC05 CORE XVIII Operating System	6	30	70	100	5
п	16CAC06 CORE XVIX Practical-11 : Operating System lab	4	30	70	100	4
п	16CS601 CORE XX Practical-12 : Android Programming Lab	4	30	70	100	3
П	Elective- II 16CSE03/16CSE04/16CSE05	5	30	70	100	4
ıĭ	16CS602Skill Based Course 4: Android Programming	6	30	70	100	3
v	Extension Activities 16NS01 NSS/ 16NC01NCC/ 16SP01 SPORTS/16YR01 YRC/16SI01 SIS #		100		100**	1

	Elective - I	16ITC06 Software Engineering
-		16CSE01 Software Project Management
		16CSE02 Distributed Computing
		16CSE03 System Analysis And Design
	Elective – II	16CSE04 System Software
		16CSE05 Client/Server Technology

List of Open Elective papers	offered by the dept.
Open Elective – I	Fundamentals and Current Trends In Information Technology
Open Elective – II	Internet of Things

			Summa	ıry			
Part	Subject	Papers	Credit	Total credits	Papers	marks	Total marks
Part I	Languages	2	3	6	2	100	200
Part II	English	2	3	6	2	100	200
	CORE	20	76		20	2000	123305
	Allied	4	16	92	4	400	2400
Part	OPEN ELECTIVES	2	3	6	2	100	200
ш	Electives	2	4	8	2	100	200
	Skill Based	4	3	12	4	100	400
							3600
	Lang.	2	1	2 ^s	2	100	200**
		3	1	3			500
Part IV	PACE	2	2	4	5	100	
	EVS & VE	2	1	2	2	100	200**
Part V	@ Extension	1	1	1	1	100	100**
	Total		_	140			

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\$ - Extra credit courses
 **-NOT INCLUDED IN TOTAL MARKS
 \$\$ - Extra credit courses for the candidates who opted other languages in PART I

CIA: Continuous Internal Assessment CE: Comprehensive Examination Total Marks for the Programme: 3600 Total Credits for the Programme: 140

Prepared by

Thena

N.Mahendiran

Approved by

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Dr. G.Maria Priscilla, Chairman, Board of studies in Computer Science, S.N.R. Sons College, Coimbatore-06.

B.Sc. Computer Science (2016 Batch)

16CS101 - NUMERICAL AND STATISTICAL METHODS

COURSE OBJECTIVES

• To enable the students to understand numerical analysis and fundamental concepts of statistics.

UNIT I NUMERICAL METHODS

System of simultaneous linear algebraic equations - Gauss Elimination , Gauss Jordan, Gauss Jacobi and Gauss Seidel methods.

UNIT II INTERPOLATION, NUMERICAL DIFFERENTIATION AND NUMERICAL INTEGRATION (15)

Inter polation : Newton Forward and Backward Interpolation Formulae **Numerical Differentiation :** Newton's Forward and Backward Difference for equal intervals **Numerical Integration :** Trapezoidal rule, Simpson's 1/3rd rule

UNIT III MEASURES OF CENTRAL TENDENCY AND DISPERSION

Measures of Central Tendency :Mean, Median, Mode Measures of Dispersion : Range, Standard deviation, Variance and Co-efficient of variation.

UNIT IV CORRELATION AND REGRESSION

Meaning and definition – Scatter diagram – Karl Pearson's co-efficient of correlation – Spearman's Rank Correlation Coefficient. Regression equation of two variables.

UNIT V PROBABILITY AND PROBABILITY DISTRIBUTION

Basic Concepts – Definition, Addition theorem – Multiplication theorem (Simple problems). Binomial, Poisson and Normal distributions.

**The Paper should have 20% theory and the remaining 80% Simple Problems only

(Total hrs = 55)

COURSE OUTCOME

After the completion of the course the students will be able to

- solve the numerical method problems.
- solve problems on central tendency and dispersion,
- analyze the correlation and regression
- apply the concepts of probability and probability distribution.
- solve numerical differentiation and integration problems.

TEXT BOOKS

 Dr. M. K. Venkataraman "Numerical methods in Science and Engineering" National Publishing Company 5st edition 1999, Reprint 2013. – Unit (I, II)

2. R. S. N. Pillai & V. Bagavathi "Statistics" S.Chand & Co. ltd, 1st edition 1984, Reprint 2014 – Unit (III, IV, V)

REFERENCE BOOKS

- M.K..Jain, S. R. K. Iyengarand R. K.Jain "Numerical methods in Scientific and Engineering Computation" New Age International Pvt. Ltd., 6th edition 2012.
- 2. S.P. Gupta "Statistical Method" Sultan Chand & Sons 44th Revised edition 2014.

Semester	Ι
Credit	4
Max.	CIA -30
Marks	CE -70
	TOT =100

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DIGITAL FUNDAMENTALS AND COMPUTER ORGANIZATION

COURSE OBJECTIVES

- To develop a strong foundation in the field of Digital Electronics and to learn fundamentals of Digital and its components.
- A student should grasp the basic concepts of computer architecture and organization, and to understand the key skills of constructing cost-effective computer systems.

UNIT - 1 INTRODUCTION TO NUMBER SYSTEMS

Number Systems - Binary, Octal, Decimal & Hexadecimal, Conversion from One Number to another -Compliments - Binary Codes - Binary Logic - Logic Gates - Truth Tables. Boolean Algebra - Axioms -Simplification of Boolean Functions. 10

UNIT – II LOGIC GATES AND CIRCUITS Adders - Subtractors - Code Convertor - Multilevel NAND and NOR Circuits - Binary Parallel Adder - Decimal

UNIT – III FLIP FLOPS AND REGIS TERS

Flip Flops - RS, JK, D And T Flip Flops - Excitation Table - Registers - Shift Registers - Counters - Ripple Counters – Synchronous Counters – Design of Counters. 11

Adder – Decoders – Encoders – Multiplexers – Demultiplexer – Design of Circuits Using Multiplexers / Decoders.

UNIT - IV INPUT - OUTPUT ORGANIZATION

Peripheral Devices - Input - Output Interfaces - Asynchronous Data Transfer - Modes of Transfer - Priority Interrupt – Direct Memory Access (DMA) – Input-Output Processor (IOP) – Serial Communication.

UNIT - V MEMORY ORGANIZATION

Memory Hierarchy - Main Memory (RAM and ROM Chips) - Auxiliary Memory - Associative Memory - Cache Memory - Virtual Memory - Memory Management Hardware.

COURSE OUTCOME

- Identify various number systems and work with Boolean Algebra. •
- Understand various logic gates. •
- Simplify the Boolean expression using K-Map and Tabulation techniques.
- Analyze various types of flip flops used for designing registers and counters and understand about the fundamental concepts of memory organization.

Total Periods: 5/Week Total Periods: 55

TEXT BOOKS

1. M.Morris Mano, "Digital Logic Computer Design", Pearson Education, 5th Edition, 2013. UNIT I - CHAPTERS (1,2), UNIT II - CHAPTERS (4,5), UNIT III CHAPTERS (6,7). 2. M.Morris Mano, "Computer System Architecture" International Edition 3rd Edition, 2013. UNIT IV - CHAPTER (11), UNIT V - CHAPTER (12).

REFERENCE BOOKS

1. Givone, "Digital Logic Computer Design", Tata McGraw Hill New Delhi, 1st Edition, 2003.

2. V.Rajaraman, "Fundamentals of Computer", PHI, New Delhi, 3rd Edition, 2002.

3. T.C.Bartee, "Compute Architecture and Logical Design", Tata McGraw Hill, 1991.

Semester	Ι
Credit	4
Max.	CIA - 30
Marks	CE - 70
	TOT =100

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16ES01 - ENVIRONMENTAL STUDIES

COURSE OBJECTIVES:

To equip the students in understanding various aspects of the environment and how environment could be applied in finding sustainable solutions to environmental issues. To learn the concepts in ecology and environmental engineering, to apply these concepts in sustainable development and restoration of ecology and environment.

- Outline the concepts of ecosystem and environmental interactions
- Understand the ecosystem functions
- To understand the role of various environmental pollutants and its effects. •

Unit I:

Multidisciplinary nature of environmental studies: Definition, scope and importance, Need for public awareness.

Unit II:

Ecosystems-Structure and function of an ecosystem, Producers, consumers and decomposers, Energy flow in the ecosystem, Food chains, food webs and ecological pyramids. Types of ecosystem Forest ecosystem, Grassland ecosystem, Desert ecosystem, Aquatic ecosystems (ponds, streams, lakes, rivers, oceans, estuaries)

Unit III :

Environmental Pollution – Definition, Cause, effects and control measures of Air pollution, Water pollution, Noise pollution, Nuclear hazards.Solid waste Management : Causes, effects and control Soil pollution, measures of urban and industrial wastes. Disaster management : floods, earthquake, cyclone and landslides.

Unit IV :

Social Issues and the Environment - Urban problems related to energy, Water conservation, rain water harvesting, watershed management, Environmental Issues in Coimbatore District (Noyyal River and Dye Industries). Environmental ethics : Climate change, global warming, acid rain, ozone layer depletion, nuclear accidents. Environment Protection Act, Wildlife Protection Act, Forest Conservation Act, Issues involved in enforcement of environmental legislation.

Unit V :

Human Population and the Environment - Population growth, variation among nations, Population explosion - Family Welfare Programme, Environment and human health, Human Rights Women and Child Welfare, Role of Information Technology in Environment and human health.

COURSE OUTCOME:

- Identify the key concepts in ecosystems management •
- Summarize wastewater characteristics and treatment protocols
- Outline the concepts of ecosystem and environmental interactions •
- Understand the ecosystem functions •
- Development of sustainable ecosystems •

REFERENCE:

1. Textbook for Environmental Studies for Undergraduate Courses of all Branches of Higher Education Erach Bharucha for University Grants Commission

2. Thangamani. A and Shymama. T, A Text Book of Environmental Studies, 2nd ed, DPH, New Delhi, 2006.

3. Environmental Studies for Undergraduate Course - Bharathiar University.

Semester	Ι
Cred it	1
Max.	CIA - 100
Marks	TOT = 100

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Total Periods: 22

* C PROGRAMMING

(Common to all Branches of Computer Science and Information Technology)

Semester	Ι
Credit	4
Max.	CIA:30
Marks	CE:70
	TOTAL: 100

OBJECTIVES

- To enable students to learn about the basic features of C Programming Language
- To learn the various decision making and looping statements
- To learn how to program using arrays and functions
- To learn about structures and pointers
- To learn file management and preprocessor in C

UNIT - I

Over view of C: History - Importance --- Sample programs - Structure of a C Program -- Programming Style .

Constants, Variables and Data Types: Character set - C Tokens - Constants, Variables and Data Types.

Operators and Expressions: Arithmetic Operator – Relational Operator – Logical Operator – Assignment Operator – Increment and Decrement Operator – Conditional Operator – Bitwise Operator – Special Operator – Arithmetic Expressions – Evaluation of Expressions – Precedence of Arithmetic Operators.

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

UNIT - II

Decision making and Branching: Decision Making with IF – Simple IF – The IF...ELSE Statement – Nesting of IF....ELSE Statements – ELSE IF Ladder – Switch Statement - ?: Statement – GOTO Statement Decision Making and looping: While Statement – DO Statement – FOR Statement

UNIT - III

Arrays: Declaring and Initializing Arrays – Declaring and Initializing One Dimensional Array – Declaring and Initializing of Two Dimensional Arrays – Multidimensional Arrays.

Character Arrays and Strings: Declaring and Initializing String Variable – Reading Strings from Terminals – Writing String to Screen – Arithmetic Operation on Characters – Putting Strings together – Comparison of two Strings – String Handling Functions.

User Defined functions: Elements of User Defined Function – Definition of Function – Return Values and Types – Function Call and Declaration - Category of Functions – Recursion – Scope and lifetime of variables in functions.

UNIT - IV

Structures and Unions: Definition of Structure – Declaring Structure Variable – Accessing Structure Member – Structure Initializing – Copying and Comparing Structure Variable – Operation on individual Member – Arrays of Structure – Arrays within Structure - Structure within Structure – Structures and Function – Union.

Pointers: Understanding Pointers – Accessing the Address of the Variable – Declaring and initializing pointer variable – Accessing Pointer Variable – Pointers and arrays – Pointers and Functions – Pointers and structures - Pointers and Character strings

UNIT - V

File Management in C: Defining and Opening the File – Closing a File – I/O Operation on File - Command Line Arguments.

The Preprocessor: Macro Substitution – File Inclusion – Compiler Control Directives.11

COURSE OUTCOME

- Explain the basics of programs and programming
- Select appropriate data types and control structures for solving a given problem.
- Illustrate the representation of arrays, strings and usage of string operations.

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- Knowledge of pointers and dynamic memory allocation.
- Explain the basics of file handling mechanism.

TEXT BOOK:

TotalPeriods :55 Hrs.

E.Balagurusamy, "Programming in ANSI C",4thEd., Tata McGraw - Hill Publications ,2007.

REFERENCE BOOKS :

- YashavantKanetkar, "Let us C", 3rd Ed., BPB Publications.
 Gottfried, "Programming with C", 2ndEd., TMH Publications

OFFICE AUTOMATION LAB

COURSE OBJECTIVES

- To develop a strong foundation in the field of office automation..
- A student should grasp the basic concepts of Ms-Word, Ms-Excel, PowerPoint and Ms-Access to understand the key skills of Desktop publishing.

Semester		Ι
Credit		3
Max.	CIA - 30	
Marks	CE - 70	
	TOT =100	

MS – WORD

- 1. Preparing a news letter: To prepare a newsletter with borders, two columns text, header and footer and inserting a graphic image and page layout
- 2. Prepare an application letter and resume applying for a job in a company.
- 3. Illustrate the mail merge concept

MS – POWER POINT

- 4. Prepare an organization Chart for a college environment in PowerPoint and advertise it.
- 5. Perform frame movement by inserting clip arts to illustrate running of a car automatically.
- 6. Prepare a power point presentation for a conference/seminar.

MS – EXCEL

- 7. Worksheet preparation for electricity bill preparation.
- 8. Draw graphs to illustrate class performance.

MS-ACCESS

9. Perform sorting on name, place and pin code of student's database and list them in the sorted order. Using queries retrieve specific information.

10. Prepare form and Report using student database.

Course Outcome:

Total Period : 3 hrs/week Total Period : 33 Hours

- Identify various applications in Ms-Word.
- Understand various techniques in Ms-Excel.
- Make presentations using Ms-Power point and presenting in software industries.
- Analyze various ways of handling table, forms and reports using Ms-Access.

* PROGRAMMING in C LAB

(Common to Computer Science / Information Technology/ Computer Applications)

OBJECTIVES

- To be familiar with programming in C Language
- To understand various programs using decision making and looping statements
- To understand simple programs using arrays and functions
- To understand simple programs in structures, pointers and file management

1. Write a C program to find the Simple interest and Compound interest.

2. Write a C program to find the given number prime or not.

3. Write a C program to find the Sum, Average and Standard deviation for a given set of numbers

4. Write a C program to solve Quadratic Equation.

5. Reliance Fresh has planned to do analysis on customer purchase behavior and they would like to announce some gift vouchers to their customers as follows.

- a. If purchase of Rs. 10000/- and above gift worth Rs.500
- b. If purchase of Rs. 8000/- to Rs 9999 gift worth Rs. 400
- c. If purchase of Rs. 5000/- to Rs 4999/- gift worth Rs. 200
- d. Otherwise no gift

Write a 'C' program to accept the details of customer like Customer ID, Customer Name, address, purchase amount and using function display the eligible customer details to receive the gift along with gift amount.

6. The telegraph company charged for their service by the number of characters in a message. The charges for different types of character are as follows:

Small case alphabet: 0.25 paise per character

Uppercase alphabet: 0.35 paise per character

Digits: 0.50 paise per character

If the number of vowels is more than 10, an additional charge of 0.85 per extra vowels is collected. Write a Cprogram to determine the following:

1. Number of Upper case alphabet. 2. Number of Lower case alphabet. 3. Number of Digits

4. Total cost in sending the telegram message.

7. Write a C program to check whether the string is a palindrome or not.

8. Eagle book shop uses a personal computer to maintain the inventory of books that are being sold at the shop. The list includes details such as author, title, price, publisher, stock position. Whenever a customer wants to purchase a book, the shopkeeper inputs the title and the author of the book then the system replies whether it is in the list or not. If it is in the list, then the system displays the book details and asks for the number of copies. If the requested copies are available, the details of the book is displayed otherwise the message "Required copies not in stock" is displayed. Implement the scenario using structure.

9. Write a C program to arrange a set of names in Ascending order using pointers.

10.Write a C program to generate pay slip using files.

COURSE OUTCOME

Upon successful completion of the course students will have

- An understanding of basic programming concepts
- An ability to write simple C programs using control structures, arrays and functions
- An ability to implement simple programs using pointers and file concepts.

Semester	Ι
Credit	3
Max.	CIA - 30
Marks:	CE - 70
	TOT =100

B.Sc. Computer Science (2016 Batch)

16CS201 – DISCRETE MATHEMATICS

COURSE OBJECTIVES

To enable the students to learn and visualize the fundamental ideas about mathematical logic, formal languages, automata, Boolean algebra and graph theory.

UNIT I MATHEMATICAL LOGIC

Connectives, Well - Formed Formulae, Equivalence of formulas, Tautological implications, Duality Law, Normal Forms, Theory of inference. Chapter : XII [Sections : 12.1 - 12.12]

UNIT II RELATION AND FUNCTION

Composition of relations, Equivalence relations, Partial ordering relation, Composition of functions, Inverse functions, One-to-one, Onto and Bijective functions.

Relations - Chapter : III [Sections : 3.1 - 3.12] Functions - Chapter : IV [Sections : 4.1 – 4.6]

UNIT III FORMAL LANGUAGES AND AUTOMATA (12)

Language, Grammar- Definition and Types. Deterministic finite automata, Non- deterministic finite automata – Conversion of non-deterministic automata to deterministic automata – procedure and problems. Chapter : XV [Sections : 15.1 – 15.7]

UNIT IV LATTICES AND BOOLEAN ALGEBRA (13)

Partial ordering, Set, Poset, Lattices, Distributive lattices, Boolean Algebra, Minimization of Boolean function using K map. Lattices - Chapter : XIV [Sections : 14.1 – 14.7]

Boolean Algebra - Chapter : XIII [Sections : 13.1 – 13.4]

UNIT V GRAPH THEORY

Basic Definitions, Representation of graphs, Paths, Reachability, Connectivity, Euler paths, Hamiltonian paths, Incidence matrix, Adjacency matrix, Trees, Binary trees, Theorems - Statements only (No Proof) Graph - Chapter : IX [Sections : 9.1 – 9.11] Trees - Chapter : X [Sections : 10.1 – 10.4, 10.11]

COURSE OUTCOME

Upon successful completion of the course, students will be able to

- Solve Mathematical logic problems.
- Visualize the fundamental ideas of relations and functions.
- Describe the different types of formal languages. •
- Apply automata theory and Boolean algebra. •
- Acquire knowledge about graph theory.

TEXT BOOKS

J.K. Sharma, "Discrete Mathematics" Macmillan Publishers India Ltd, 3rd edition 2011. 1

REFERENCE BOOKS

1. Dr.M.K. Venkataraman, Dr.N. Sridharan, N. Chandrasekaran "Discrete Mathematics", National Publishing Company, 1st edition 2000, Reprint 2012.

Semester	Π
Credit	4
Max.	CIA -30
Marks	CE -70
	TOT =100

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(Total hrs = 55)

C++ LAB	Semester	II
	Credit	3
	Max. Marks	CIA -30
		CE -70
COURSE OBJECTIVES		TOT =100

- Develop solutions for a range of problems using objects and classes.
- Programs to demonstrate the implementation of constructors, destructors and operator overloading.
- Apply fundamental algorithmic problems including type casting, inheritance, and polymorphism

Write C++ Programs to illustrate the concept of the followings

- 1. Write C++ Program to illustrate the concept Arrays
- 2. Write C++ Program to illustrate the concept Inline Functions
- 3. Write C++ Program to illustrate the concept Objects and Classes
- 4. Write C++ Program to illustrate the concept Array of objects.
- 5. Write C++ Program to illustrate the concept Constructors and Destructors
- 6. Write C++ Program to illustrate the concept Overloading unary operators
- 7. Write C++ Program to illustrate the concept Overloading binary operators
- 8. Write C++ Program to illustrate the concept Overloading operators using friend function
- 9. Write C++ Program to illustrate the concept Multilevel Inheritance
- 10. Write C++ Program to illustrate the concept Multiple Inheritance
- 11. Write C++ Program to illustrate the concept Virtual Functions
- 12. Write C++ Program to illustrate the concept Console I/O operations

COURSE OUTCOME

Having successfully completed this course, the student will be able to:

- Apply an object oriented approach to programming and identify potential benefits of object-oriented programming over other approaches.
- Reuse the code and write the classes which work like built-in types.
- Design applications which are easier to debug, maintain and extend.
- Apply object-oriented concepts in real world applications

Total Periods: 44 Hours

DATA STRUCTURES LAB USING C

(Common to Computer Applications, Computer Science and Information Technology)

COURSE OBJECTIVES

- To develop skills to design and analyze simple linear and nonlinear data structures.
- To strengthen the ability to identify and apply the suitable data structure for the given real world problem
- To gain knowledge in practical applications of data structures

WRITE C PROGRAMS TO ILLUSTRATE THE DATA STRUCTURE CONCEPTS

- 1. Create a C Program to find out Maximum and Minimum of given numbers using an array.
- 2. Write a C Program to calculate Factorial of a given number using Recursion.
- 3. Write a C Program to transpose of a given matrix using Two Dimensional Array.
- 4. Create a Stack and Perform the operations like PUSH, POP and VIEW its elements in C.
- 5. Create a Queue and Perform the operations like INSERT, DELETE & VIEW its elements in C.
- 6. Write a simple code for linear search in C Programming Language.
- 7. Write a C Program to search an element in an array using binary search.
- 8. Sort out the given numbers using Merge Sort Techniques in C Programming Language.
- 9. Sort out the given numbers using Quick Sort Techniques in C Programming Language.
- 10. Write a C Program to create a Linked List and Display its Length.

Total Periods: 44Hrs

COURSE OUTCOME

- Ability to implement elementary data structures such as stacks, queues, linked lists, trees and graphs.
- Ability to determine the appropriate data structure to represent real world applications.
- Acquired practical knowledge on the application of data structures.

Semester	II
Credit	3
Max. Marks	CIA -30
	CE -70
	TOT =100

	Semester	II
	Credit	5
Data Structures	Max. Marks	CIA -30
(Common to Computer Applications, Computer Science and Information		CE -70
Technology)		TOT =100

COURSE OBJECTIVES

- To get the detailed knowledge of basic data structures and importance of data structures in computer programs.
- Distinguish the key difference between various data structures.
- Recognize the problem, properties, to develop an algorithm and determine the use of appropriate data structures in different real world applications.

UNIT-I

Introduction: Definition, Structure and properties of algorithms, Development of an algorithm, Data Structures and Algorithms, Data Structure - Definition and Classification. **Arrays:** Introduction, Array Operations, Number of elements in an array, Representations of arrays in memory, applications.

UNIT-II

Stacks: Introduction - Stack Operations - Stack implementations- **Applications:** Recursive Programming – Evaluations of Expressions. **Queues:** Introduction – Queue Operations – Queue implementations - Limitations of Linear Queue - **Circular Queues:** Operations on a Circular Queue – implementations of insertion and deletion in a Circular Queue - Other types of queues Priority Queues - Deque. **Applications** of Linear queue – **Applications** of Priority Queue.

UNIT-III

Linked Lists: Drawbacks of sequential data structure – Merits of Linked data structures. **Singly Linked List:** Representations - Insertion and Deletion in a singly Linked Lists. **Circular Linked lists** : Representations – Advantages of Circular Linked lists Over singly Linked Lists - Disadvantages of Circularly Linked Lists – Primitive Operations on Circular Linked lists. **Doubly linked lists** : Representations – Advantages of Disadvantages of Disadvantages of Doubly Linked lists - Operations on Doubly Linked lists. **Applications** : Addition of Polynomials.

UNIT-IV

Trees: Introduction, Trees-basic terminologies, Representation of Trees. **Binary Trees:** Basic terminologies and types, representation of Binary Trees, Binary tree Traversals, Threaded Binary Trees, Applications. **Graphs:** Introduction, Definition and basic terminologies

UNIT-V

File organizations; Introduction, Files, Keys, Basic File Operations. Sequential File Organizations, Indexed Sequential File Organizations, Direct File Organizations. **Searching** : Linear search, Binary search. **Sorting**: Merge sort and Quick sort.

Course Outcome

Having successfully completed this course, the student will be able to:

- Implement various operations of data structures.
- Design and implement abstract data types such as linked list, stack, queues and trees to solve particular problems
- Understand and implement fundamental algorithms like sorting and searching in various real time applications.

Total Periods 5Hr/Week Total Period:55

TEXTBOOKS

1. G A V PAI "Data Structures and Algorithms-Concepts, Techniques and Applications"- TATA McGRAW HILL, 6th Reprint -2011. HTTP://WWW.mhhe,com/pai/dsa.

REFERENCEBOOKS

 Ellis Horowitz &Sartaj Shani "Data And File Structures"- Galgotia Publication.
 Jean Paul Tremblay, Paul G. Sorenson "An Introduction to Data Structures With Applications"-Second Edition, Tata Mcgraw Hill.

Object Oriented Programming WITH C++

(Common to Computer Applications, Computer Science and Information Technology)

COURSE	OBJECTIVES
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- To inculcate knowledge on Object-Oriented programming concepts using C++.
- Topics include pointers, classes, overloading, data abstraction, information hiding, encapsulation, inheritance, polymorphism, file processing, templates, exceptions, container classes, and low-level language features.

UNIT-I

Principles of Object-Oriented Programming: Software evolution - Procedure - oriented programming-Object-oriented programming paradigm - Basic concepts of OOPS - Benefits of OOPS - OOPS languages - Application of OOPS.

Beginning with C++: What is C++ - Application of C++- Structure of C++ program-Tokens, Expressions and ControlStructures: Tokens-keywords-Identifiers-Datatypes-Declaration of variablesdynamic initialization of variables - Reference variables-Operators - Scope resolution operator -**Operator Precedence – Control Structures**

UNIT-II

Functions in C++: The main () function - Function prototype - Call by Reference - Inline functions Default arguments - Function overloading

Classes and Objects: Specifying Class - Defining member functions - Private member functions-Array with a class-Static data members - Static member functions - Array of objects - Objects as function arguments - Returning objects - Constant member functions - Friendfunctions

UNIT-III

Constructors and Destructors: Constructors Types of constructors – Multiple constructors in a class Dynamic constructor - Destructors.

Operator Overloading and Type Conversion : Defining operator overloading function -Overloadingunary operators - Overloading binary operators - Overloading operators with friend functions -Rules for overloading operators

UNIT-IV

Inheritance: Defining derived classes – Types of inheritance – Virtual base classes – Abstract classes-Nesting of classes.

Pointers, Virtual functions and polymorphism: Pointers to objects - this pointer - pointers to derived classes - virtual functions - pure virtual functions

UNIT-V

File organizations: Introduction, Files, Keys, Basic file operations. Sequential file Organization-indexed sequential file Organizations, Direct file organizations Managing Console I/O Operators : C++ streams -Stream classes - Unformatted I/O operations - Formatted console I/Ooperations.

Working with Files: Classes for file stream operations - Opening and Closing a file - Detecting end-offile-File open modes - File pointers and their manipulators

TotalPeriods: 55

COURSE OUTCOME

Having successfully completed this course, the student will be able to:

Differentiate between structures oriented programming and object oriented programming.

Use of object oriented programming language like C++ and associated libraries to develop object oriented programs

Semester	Π
Credit	5
Max. Marks	CIA -30
	CE -70
	TOT =100

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- Understand and apply various object oriented features like inheritance, data abstraction, encapsulation and polymorphism to solve various computing problems using C++ language.
- Understand and analyze the time and space complexity of an algorithm
- Apply concepts of operator overloading, constructors and destructors.

TEXT BOOKS

1. E.Balagurusamy" Object-Oriented Programming With C++"- TataMcGrawHill Publishing Company Ltd,1998.

REFERENCE BOOKS

1. Ashok N. Kamathene "Object Oriented Programming With Ansi And Turbo C++ Pearson Education

VALUE EDUCATION (Common to all UG courses)

COURSE OBJECTIVES

- To orient about the society, social life, integrity in personal and public life.
- To learn the concepts of human values and respect for others
- To provide in-depth understanding about moral awareness
- To inculcate a sense of socially responsible citizens.

UNIT - I VALUE EDUCATION & HUMAN EDUCATION

Value Education - Definition - relevance to present day - Concept of Human Values - Self Introspection - Self Esteem

UNIT – II SOCIETY & FAMILY VALUES

Structure and components of Society - Marriage and Family Values - Neutralization of Anger, Adjustability - Threats to family life.

UNIT - III ETHICS & LEADERSHIP QUALITIES

Ethical values: Ethics, Social Ethics, Public Policy - Leadership qualities: Integrity, Character, Courage - Personality development – Respect for Inter-culture

UNIT - IV SOCIAL VALUES

Social Values, Faith, Service, Commitment and Decency - Fundamental Rights and Responsibilities of citizens

UNIT - V SOCIAL PROBLEMS AND ROLE OF STUDENTS

Social Problems: Definition - Poverty, Illiteracy, Unemployment, Exploitation, Obscenity, Immorality - Crimes and Online Crimes - Student unrest, Ragging and Peaceful Campus - Role of Students in tackling social problems

Course Outcome

- Develop a sense of self respect and respect for others
- Able to occupy one's own social space and help others live peacefully
- Develop scientific temper and logical reasoning and to apply in day to day life

REFERENCE BOOKS

- 1. Mani Jacob (Ed). 'Resource Book for Value Education', Institute for Value Education, New Delhi. 2002.
- 2. NCERT. "Value Education". Dharma Bharti National Institute of Peace and Value Education, Secunderabad, 2002.
- 3. Daniel and Selvamony. "Value Education Today Madras Christian College, Tambaram and ALACHE, New Delhi, 1990.
- 4. Ignacimuthu S. "Values for Life". Better Yourself Books, Mumbai, 1991.
- 5. M.M.M.Mascaronhas. Centre for Research Education Science and Training for Family Life Promotion Family Life Education, Bangalore, 1993.

Semester	II
Credit	1
Max.	CIA - 100
Marks	тот =100

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Total Periods : 20

16 CSI 01 OPEN ELECTIVE I- FUNDAMENTALS AND CURRENT TRENDS IN INFORMATION TECHNOLOGY

COURSE OBJECTIVES

- Identify the function of computer basic components
- Identify the various memory units and input/output devices •
- Identify how operating system work to perform computing tasks
- Identify different types of computer languages, general concepts relating to software categories
- Identify the different types of communication and what is computer networks is and how it works,

UNIT-I

Introduction to Computers: Introduction - Types of Computers - Characteristics of Computers - Five Generations of Modern Computers - Classification of Digital Computer Systems - Anatomy of a Digital Computer

UNIT-II

Memory Units: Introduction - RAM - ROM - PROM - EPROM - EEPROM - Flash Memory.

Auxiliary Storage Devices: Introduction – Magnetic Tape – Winchester Disk – Hard Disk – Floppy Disk – Zip Disk – Jaz Disk – Super Disk – Optical Disk – CD-ROM.

Input Devices: Introduction - Keyboard - Mouse - Scanners - Digital Camera - MICR - OCR - OMR - Bar Code Reader – Touch Screen – Light Pen.

Output Devices: Introduction - Monitor - Classification of Monitors (Based on Color and Signals) - VGA -SVGA - XGA - Printer - Plotters - Sound Card & Speakers.

UNIT-III

Operating Systems: Introduction – Functions of an Operating System – Classification of Operating Systems. Programming Languages: Introduction – Machine Languages – Assembly Languages – High-Level Languages - Compilers and Interpreters - The Compilation Process.

UNIT-IV

Computer Networks: Introduction - Overview of a Network - Communication Processors - Communication Media - Types of Networks - Network Topologies - Network Protocols.

Introduction to Computer Security - Cryptography - Computer Viruses, Bombs and Worms.

UNIT-V

Internet and World Wide Web: Introduction - Internet Access - Internet Protocols - Internet Addressing - The World Wide Web - Web Pages and HTML - Web Browsers - Searching the Web. Electronic Mail: Introduction - Why use E-Mail - How Private is E-Mail - How E-Mail Works - E-Mail Names & Addresses - Mailing Basics - E-Mail - Advantages & Disadvantages. Introduction to intranets - Introduction to Multimedia - Multimedia Tools - Mobile Computing

Total Periods: 44

COURSE OUTCOMES

After studying this course, you should be able to:

- Understand the computer basics, data representation and computer memory.
- Understand the computer generations and classifications •
- Understand the operating system and computer languages used for in a computer •
- Understand the operating systems, micro computer and computer generations and classifications
- Implement the voice and data communications ,computer networks

Semester	III
Credit	3
Paper	Open
Туре	Elective
Max.	CIA -30
Marks	CE -70
	TOT -100

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TEXT BOOK

1."Alexis Leon, Mathews Leon", Introduction to Computers, published by Leon TECH World 2010.

REFERENCE BOOK

1.V.Rajaraman "Fundamentals of Information Technology" 4th Edition PHI Publishers 2010.

Verified By

N Mahendiran

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Approved By Dr G Maria Priscilla

16CPE03 PERSONALITY, APTITUDE AND CAREER ENHANCEMENT (PACE - III)

Common to all the UG streams admitted from AY 2016-17

AIM:

• To help students in order to understand basics concepts of Quantitative and Reasoning Ability. Inculcate higher level of Emotional Intelligence to help them following up with the concepts learnt in PACE 1 and PACE 2. To equip the students with self-assessment tools to track their progress in Linguistic Development, especially in Writing and Speaking.

Course Objectives

To introduce students,

- To understand basics concepts of Quantitative and Reasoning Ability and make the students understand the importance of Quants and Reasoning in Recruitment Process.
- To make the students understand the application of linguistic concepts learnt in PACE 1 and PACE 2 with relevance to Placement.
- To equip the students with self-assessment tools to track their progress in Linguistic Development, especially in Writing and Speaking.
- To introduce basic level Interview Questions.

Unit I – Quantitative Ability – I

Number Properties – Divisibility rules, Unit digit, BODMAS, HCF and LCM. Averages AP and GP – Percentage – Increase and decrease concepts. Profit and Loss – Interest Calculation- Simple interest and compound interest.

Unit II – Arithmetic Reasoning – I

Data Arrangements – Linear and Circular arrangement. Data Interpretation – Alpha & Numeric series – Odd man out. Coding & Decoding

Unit III – Verbal Ability – I

Vocabulary – Etymology, Root words, Verbal Analogy. Workshop on Reading – Sub-skills of Reading, Techniques of Reading, Jumbled Paragraphs and Jumbled Essays. Application of Grammar concepts – Sentence Construction

Unit IV – Linguistic Ability

Writing & Speaking Skills – Parts of Speech, Modal Verbs, Tenses, Active and Passive Voice, Degrees, Articles, Contextual usage of words – Conversational English

Unit V – Emotional Intelligence – Level 2

Time Management – Conflict Resolution – Stress & Anger Management – Online presence & researching online – Mind maps – Negotiation & Persuasion – Level 1 & 2 Interview Questions

Instruction Hours per Week: 40

	Semester	III
	Credit	1
y 1	Paper Type	Skill based
1		Online test : 50
s	Max. Marks	+
		Viva-Voce : 50
		- 100

Course Outcomes

On the successful completion of PACE 3, the students would be able to

- Solve questions on basic Quants, Verbal and Reasoning Ability
- Inter-relate all the linguistic concepts learnt and apply them while solving questions on Verbal Ability
- Develop the habit of Reading
- Understand the relevance and application of Emotional Intelligence in the Recruitment Process
- Answer basic level Interview Questions

References

- 1. Quantitative Aptitude for Competitive Exams by R. S. Agarwal
- 2. Quantum CAT by Sarvesh Verma
- 3. A Modern Approach to Logical Reasoning by R. S. Agarwal
- 4. Verbal Ability and Reading Comprehension by Arun sharma
- 5. Word Power Made Easy by Norman Lewis
- 6. High School English Grammar by Wren and Martin
- 7. English Conversation Practice by Grant Taylor
- 8. Group Discussion and Interviews by Anand Ganguly
- 9. Art of Social Media by Guy Kawasaki

Verified by Course Coordinator

Dr.A.Arun Rajkumar



Approved by Chairman - BOS

Dr.G Maria Priscilla

16CS301 CORE X PRACTICAL-5: VISUAL BASIC PROGRAMMING LAB

COURSE OBJECTIVES

- Implement the event driven programming using Visual Basic 6.0 forms and controls
- Use programming fundamental features like variables, control structures, procedures, etc.
- Create menu to make the application more interactive
- Create your own class to implement some business logic in the application
- Create ActiveX components like DLL, OLE use them in client application
- Create Data centric applications by connecting to the databases

PERFORM ALL PROGRAMS

- 1. Develop a program to calculate the simple and compound interest
- 2. Write a VB program to perform string Manipulation operations like string compare, string length, upper case and lower case.
- 3. Develop a program to check username and password given by user
- 4. Develop a program to add and remove item from a list Box and Combo box
- 5. Develop a program to scroll text from left to right using and display date and time by using timer control
- 6. Develop a program to convert a Decimal number to Binary number and vice versa.
- 7. Develop a program to Mini Calculator function
- 8. Develop a program to Monthly Calendar using Flex Grid
- Use Employee information for the following projects: Develop a program to Insert, delete, update, Move First Record, Move next Record, and Move previous Record in Ms Access database using DAO
- 10. Develop a program to Insert, delete, update, Move First Record, Move next Record, Move previous Record, and Move last Record in Ms Access database using ADO

COURSE OUTCOME

On completion of this course, the students will be able to

- Understand the how calculations are done in visual basic
- Evaluate the various visual basic string operations and various controls and its usages.
- Implement the data base connectivities.

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Total Periods: 55

Approved By

Dr.G Maria Priscilla

N.Mahendiran

SemesterIIICredit3PaperCoreTypePracticalMax.CIA -30MarksCE -70TOT =100

16CS302 CORE XI PRACTICAL-6 WEB TECHNOLOGY LAB

COURSE OBJECTIVES

- To learn how to create a simple web page using html along with the usage of style sheets, lists, creation or tables with borders, padding and colors.
- To get acquainted with javascript and how to embed javascript in html code.
- To get acquainted with javascript procedures and usage of regular expressions in javascript.
- To write functions in html, validate using regular expressions.

PERFORM ALL PROGRAMS

- 1. Create a static HTML web page to display the college details.
- 2. HTML Program to implement ROWSPAN COLSPAN concepts.
- 3. Create HTML program to implement FRAMESET.
- 4. Create a HTML program to implement the image and its properties
- 5. Create a HTML program to implement Order List and Unordered List Concepts.
- 6. Create a simple style sheet and link that style sheet in HTML form.
- 7. Create a Registration Form for e-mail information using HTML.
- 8. Write a Java script program to find the Grade from the Students Mark details.
- 9. Write a Java script program to create and initializing arrays.
- 10. Write a Java script program to validate username and password.

Total Periods: 44

COURSE OUTCOME

- Create web pages using HTML, DHTML and Cascading Style Sheets.
- Create dynamic web pages using JavaScript, XML.
- Understand, analyze and apply the role of languages like HTML, DHTML, CSS, JavaScript and PHP.
- Analyze a web page and identify its elements and attributes.

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Verified By

N.Mahendiran

Semester	III
Credit	3
Paper	Core
Types	Practical
Max.	CIA -30
Marks	CE -70
	TOT -100



Approved By

Dr.G Maria Priscilla

16CS303 SKILL BASED COURSE-1 WEB TECHNOLOGY

COURSE OBJECTIVES

- To enable the student to design, develop, build and manage real web applications using current software development technologies and methodologies.
- To highlight the features of different Scripting Languages and Open source web development.

UNIT - I

Introduction to XHTML: Introduction – Editing XHTML-First XHTML Example-W3C XHTML Validation Service-Headers-Linking-Images-Special Characters and More Line Breaks-Unordered List-Nested and Ordered Lists XHTML Tables-Tables and Formatting-Forms-Complex Forms-Internal Linking-Creating & Using Image Maps-Meta Elements-Frameset-Nested Frameset

UNIT – II

Introduction–User Input & prompt Dialogs-Memory Concepts-Arithmetic-Relational Operators-Logical Operators-Control Structures-If, Else, While, Do-While, For, Break, Continue-Programmer-Defined Functions-Scope rules-Global Function-Recursion-Arrays-Passing Arrays to Function-Multidimensional Arrays.

UNIT – III

JavaScript-Object-Math Object-String Object-Date Object-Boolean and Number Objects-Document Object-Window Object-Using Cookies

UNIT – IV

DHTML Object Model and Collections:-Object Referencing-Collections all and Children-Dynamic Styles-Dynamic Positioning-Frames Collection-Navigator Object DHTML Event Model:-Event Onclick-Onload-Onerror-Onmousemover-Onmouseout-Onfocus-Onblur-Onsubmit-Onreset-Event Bubbling-DHML Events

UNIT-V

Cascading Style Sheets: Inline Styles-Embedded Styles Sheets-Conflicting Styles Sheets-W3C CSS Validation Service-Positioning Element-Backgrounds-Element Dimension-Text Flow and Box Model-User Style Sheets

COURSE OUTCOME

Having successfully completed this course, the student will be able to:

- Understand the need for and be able to write validated XHTML.
- Evaluate the principles of W3C and be able to write compliant XHTML documents.
- Understand and be able to use Javascript to access the DOM to reference web document object CSS properties.
- Implement the various mouse events using DHTML
- Design the application of XHTML for document structure and content.
- Understand and apply CSS definitions for document presentation.
- Understand and apply Javascript, CSS & XHTML to create dynamic XHTML.

Total Periods: 55

Semester	III
Credit	3
Paper	Skill
Туре	Based
Max.	CIA -30
Marks	CE -70
	TOT -100

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TEXT BOOK

1. Deitel & Deitel, Goldberg "Internet & World Wide Web – How to Program" 3rd Edition, Pearson Education 2012.

UNIT – I: Chapter 4, 5 UNIT – II: Chapter 7,8,9,10,11 UNIT – III: Chapter 12 UNIT – IV: Chapter 13,14 UNIT – V: Chapter 6

REFERENCE BOOK

1.Jeffery C.Jackson "Web Technologies- A Complete Service Perspective" Pearson Education 2011

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Verified By

N.Mahendiran

Approved By

Dr.G Maria Priscilla

16ITC05 CORE IX-COMPUTER NETWORKS

(Common to all branches of Computer Science and Information Technology)

COURSE OBJECTIVES	Credit	5
 To understand the Reference model and its layers. 	Paper	Core
• To know the Data link Layer with the issues arising in Channel Allocation.	Туре	
• To be aware of the various routing algorithm for transferring data.	Max.	CIA:30
• To know about the services of the transport layer.	Marks	+
• To secure data from the opponent while the data is transferred.		CE :70
Introduction: Uses of Computer networks - Network hardware - Reference models The Physical Layer: Guided transmission media-Communication satellites – Wireless Tran The Mobile Telephone System.	ismission-	
UNIT –II MEDIUM ACCESS CONTROL LAYER		
The Data link layer: Data link layer design issues-Error detection and correction.		
The medium access Control sub layer: The channel allocation problem- Multiple Access P	rotocols: Car	rier Sense
Multiple Access Protocols, Collision free Limited Contention Protocols- Broadband Wirel	ess.	

UNIT – III NETWORK LAYER

The Network layer: Network layer design issues – Routing algorithms: The optimality Principle – Shortest path algorithm - Flooding - Distance vector routing - Link State Routing - Hierarchical Routing -Broadcast Routing - Routing for mobile hosts - Congestion Control Algorithm - Approaches - Traffic Aware -Admission Control.

UNIT – IV TRANSPORT LAYER

The Transport Layer: The Transport Service: Service provided to the upper layer-transport service primitives, Berkeley Sockets-Elements of transport protocols The Internet Transport Protocol UDP - Remote Procedure call.

UNIT - V APPLICATION LAYER

The application layer:DNS- the Domain Name System. Network Security: Cryptography – Symmetric key algorithms- Public key Algorithm – RSA – Digital Signatures.

COURSE OUTCOMES

- To identify the services of the layers of the reference model.
- To deal with the issues when data transferred through channels.
- To be able to choose the right routing technique.
- To identify the Protocols that are used from the time of Data transferred till it reaches the destination.
- To implement various cryptographic algorithms to secure data.

TEXTBOOK

1. Andrew S TanenBaum&David.J.Wetherall, "Computer Networks", 5th Edition, Pearson Edition Publications, 2011.

UNIT II- CHAPTERS 3,4

UNIT IV CHAPTER 6

UNIT I - CHAPTERS 1, 2 UNIT III - CHAPTER 5 UNIT V - CHAPTERS 7,8

REFERENCEBOOKS

1. Miller "Data and Communication", Vikas Publication, 2001

2. William A Shay, "Understanding Data Communication and Network" 2nd Edition, VikasPublication, 2001



Prepared by : Mr.A.SUNIL SAMSON

N'all

Approved by: Dr.N.SUMATHI

Semester	IV
Credit	5
Paper	Core
Туре	
Max.	CIA:30
Marks	+
	CE :70

13

13

14

13

13

TotalPeriods: 66

16MATC05 Allied III – OPERATION RESEARCH (Common toB.Sc. Computer Science, BCA, B.Sc. Information Technology)

COURSE OBJECTIVE

To enable the students to understand the operational research concepts.

UNIT I LINEAR PROGRAMMING

Introduction - Mathematical Formulation of the Problem - Graphical Solution - Standard forms of the LPP - Simplex Methodof \leq constraints only. Chapter - 2 &3 (2.1 - 2.3) (3.1, 3.2, 3.4, 3.5, 3.6)

UNIT II TRANSPORATION AND ASSIGNMENT PROBLEM

(10)The Transportation Problem : Mathematical Formulation - Initial Basic Feasible Solution [North - West Corner Rule method, Least Cost method, VAM] - Unbalanced Transportation problem - Optimal solution [MODI Method] (Non-degeneracy problems only). Assignment Problem : Mathematical Formulation - Hungarian Assignment method - Unbalanced Assignment problem . Chapter - 10 & 11 (10.1 - 10.3, 10.8 - 10.13) (11.1 - 11.4)

UNIT III GAME THEORY AND INVENTORY CONTROL

(10)Game Theory : Concept of Pure and Mixed Strategies - Solving 2x2 matrix with and without saddle point-Graphical method of solving 2xm and nx2 games - Dominance property. Inventory Control : Introduction - Various costs involved in the Inventory - EOQ models with and without shortages.

Chapter - 17 & 19 (17.1 - 17.7) (19.1 - 19.11)

UNIT IV REPLACEMENT PROBLEMS AND WAITING LINE THEORY (10)

Elementary replacement models - Individual and Group Replacement. Definition of waiting line models – Problems from single server infinite population models.

Chapter -18 &21 (18.1 - 18.3) (21.1 - 21.4, 21.7 - 21.9 model I only)

UNIT V CPM AND PERT

Network representation - forward and backward pass computation - Critical path - Total, free and independent floats

PERT Calculations - Time scale analysis - Critical path - Probability factor.

Chapter – 25 (25.1 - 25.8) (except 25.5)

* No Derivations. Only applications

COURSE OUTCOME

After the completion of the course the student will be able

- to apply and solve linear programming, •
- to apply and solve transportation and assignment problems; •
- to acquire knowledge about game theory and to solve inventory models
- to acquire knowledge about replacement in real life and to solve waiting line problems. •
- to solve network models.

TEXT BOOK

Operations Research - KantiSwarup, P.K.GuptaandManmohan

REFERENCE BOOKS

1. Introduction to Operations Research - P.K. Gupta, D.S. Hira

- 2. Resource Management Techniques Sundaresan, Ganesan&Ganapathy Subramanian
 - 3. Problems in Operations Research P.K.Gupta and Manmohan.

Dr.N.UMA (Course coordinator)

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Dr.HANNAH REVATHY F. (BOS Chairman)

Semester	III
Credit	4
Paper	Allied
Туре	
Max.	CIA -30
Marks	CE -70
	TOT =100

(10)

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Total Periods: 50L + 5T

16CPE04 PERSONALITY, APTITUDE AND CAREER ENHANCEMENT (PACE - IV)

Common to all the UG streams admitted from AY 2016-17

AIM:

• To equip students in order to recap concepts learnt in PACE 3 and introduce more Quants, Verbal and Reasoning concepts to the students. To introduce concepts on Critical Reasoning and to get extensive exercises on Group Discussion, by inculcating all the sub-skills that are required to participate effectively in the Placement Process. Introduce higher level concepts on Resume Writing and make the students finalise their Resumes. To reiterate the importance of Impression Management in Recruitment Process.

Course Objectives

To equip students,

- To recap concepts learnt in PACE 3 and introduce more Quants, Verbal and Reasoning concepts to the students.
- To introduce concepts on Critical Reasoning.
- To give extensive exercises on Group Discussion, by inculcating all the sub-skills that are required to participate effectively in the Placement Process.
- To introduce higher level concepts on Resume Writing and make the students finalise their Resumes.
- To reiterate the importance of Impression Management in Recruitment Process and introduce Higher Level Interview Questions.

Unit - 1: Quantitative Ability – II

Time Speed Distance – Problem on Trains, Boats and stream, races. Time and Work – Pipes and cistern. Permutation and Combination – Probability – Ratio Proportion, Problem on ages. Mixtures and Solutions – Alligations

Unit - 2: Reasoning Ability - II

Venn Diagram- set language properties. – Syllogism – Data Sufficiency- Applications of quantitative ability concepts. Clocks and Calendars.

Unit-3: Verbal Ability – II

Exercises on Vocabulary, Grammar and Reading Comprehension – Identifying Style & Tone of a Paragraph – Sentence Improvisation. Critical Reasoning – Statement/Argument – Premises, Inference, Conclusion, Strengthening & Weakening of arguments

Unit 4: Group Discussion Skills

Creative Thinking – Problem Solving – Dealing with criticism – Leadership skills – Team Playing skills – Presentation skills – Spontaneity – Empathy – Perseverance – Decision Making

Unit – 5: Interview Skills

Resume Writing Techniques – Types of Resume – Understanding Key Words – JD Mapping. Interview Techniques – Reiteration of SWOT and Goal Setting – Level 3 Interview Questions – Importance of Grooming and Non-verbal Communication

Instruction Hours per Week: 40

Semester	IV
Credit	2
Paper Type	Skill based
Max. Marks	Online test : 50
	+
	Viva-Voce : 50
	= 100

Course Outcomes

On the successful completion of PACE 4, the students would be able to

- Solve questions on Quants, Verbal and Reasoning Ability on concepts that are pre-requisites in the current Placement Scenario
- Solve questions on Critical Reasoning
- Participate effectively in Group Discussions without any inhibitions
- Finalise their Resumes and answer higher level questions in an Interview

References

- 1. Quantitative Aptitude for Competitive Exams by R. S. Agarwal
- 2. Quantum CAT by Sarvesh Verma
- 3. A Modern Approach to Logical Reasoning by R. S. Agarwal
- 4. Verbal Ability and Reading Comprehension by Arun sharma
- 5. Word Power Made Easy by Norman Lewis
- 6. High School English Grammar by Wren and Martin
- 7. English Conversation Practice by Grant Taylor
- 8. Group Discussion and Interviews by Anand Ganguly
- 9. Art of Social Media by Guy Kawasaki

Verified by Course Coordinator

Dr.A.Arun Rajkumar



Approved by Chairman - BOS

Dr.G Maria Priscilla

16CS401 CORE XIV PRACTICAL-8.NET PROGRAMMING LAB

COURSE OBJECTIVES

- Gain an understanding of the Microsoft .NET architecture.
- Acquire a working knowledge of creating and rich internet Web application using the .NET Framework 4.5
- Configure and deploy a Microsoft ASP.NET Web application.
- To gain a strong knowledge in all Dot Net Web application concepts

PERFORM ALL PROGRAMS

1 Design a personal web page using ASP.

- 2. Design a data entry form in ASP.
- 3. Write a Program in ASP to get data using a form, validate the data and returns the same data for correction if any using the same form.
- 4. Write a program in ASP to display the Session properties.
- 5. Write a program in ASP that makes use of Ad Rotator component.
- 6. Write a program in ASP that makes use of Browser Capabilities component.
- 7. Write a program in ASP that makes use of Content Rotator component.
- 8. Write a program in ASP that makes use of page counter component.
- 9. Write a program in ASP to get the data of students using forms and stores them in database.
- 10. Write a program in ASP to perform record navigation using a form.

Total Periods: 44

COURSE OUTCOME On completion of this course, the students will be able to

- Understand to design web applications using ASP.NET.
- Use ASP.NET controls in web applications.
- Develop to debug and deploy ASP.NET web applications
- Create database driven ASP.NET web applications and web services

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Approved By

Dr.G Maria Priscilla

Semester	IV
Credit	3
Paper	Core
Туре	Practical
Max.	CIA -30
Marks	CE -70
	TOT =100

16CS403 SKILL BASED COURSE -II .NET PROGRAMMING

COURSE OBJECTIVES

- Introduction to .NET framework and HTML controls.
- Server side programming: Web Forms, ASP.NET Web Services, ADO.NET Data • Access
- ASP .NET Web server controls •
- OLEDB connection with Database.
- Web services and security

UNIT-I

ASP.NET Basics: ASP.NET Language Structure- page structure- Defining your own procedures- Page - Compiler Directives.HTML Server Controls: HTML Anchor Control- HTML form & form input controls - HTML Input file Control- Basic Web Server controls.

UNIT-II

Data List Web Server Controls: Check box list Control- Radio Button List Control- Dropdown List Control-ListBox Control- Datagrid Control - Repeater Control.

Web Server Controls: Calendar Control - AdRotator Control- Validation Control - IE web controls.

UNIT –III

Working with Data: System data & System Data OLEDB Namespaces-OLEDB Connection class- OLEDB command class - OLEDB transaction class- OLEDB DataAdapter class- Dataset class.

System Data.SQL Client Namespace: Connecting to a SQL Server Database - Manipulating data in a SQL Server Database-Retrieving Data from a SQL Server Database-Client Sample Site.

UNIT-IV

Application Issues: Creating an ASP.NET Application- Maintaining Session State - Maintaining Application State - Global asax file - Web Config file.

Error Handling: No Error Handling- Resume next- On Error Goto Handler- Resume from handler - Try/ catch code Block-Error object.

UNIT-V

Creating Web Services: Simple Web services- Zip code web service. Security: Authentication Control - IP address restrictions - Secure communications through SSL- CLIENT Certificate.

COURSE OUTCOME:

Having successfully completed this course, the students will be able to:

- Understand the development and deployment cycles of enterprise applications. •
- Utilize the .NET framework to build distributed enterprise applications. .
- Develop web applications using a combination of client-side (JavaScript, HTML, XML, WML) and serverside technologies (ASP.NET, ADO.NET).
- Develop ASP.NET Web Services, secure web services, and .NET applications.
- Understand the protocols behind web services.

Semester	IV
Credit	3
Paper	Skill
Туре	based
Max.	CIA -30
Marks	CE -70
	TOT =100

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Total Periods: 55

TEXT BOOK

Greg Buczek - "ASP.NET Developer's Guide" - Tata McGraw Hill Edition-2010.

REFERENCE BOOK:

- Mathew Macdonald-"The Complete Reference"-2010.
 Kogent Learning Solutions Inc-" ASP.NET Black Book"-2010.

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Dr.G Maria Priscilla

16CSE01 SOFTWARE PROJECT MANAGEMENT

COURSE OBJECTIVES:

- Deliver successful software projects that support organization's strategic goals
- Match organizational needs to the most effective software development model
- Plan and manage projects at each stage of the software development life cycle (SDLC)
- Create project plans that address real-world management challenges
- Develop the skills for tracking and controlling software deliverables

Semester	IV
Credit	4
Paper	
Туре	Elective -I
Max.	CIA -30
Marks	CE -70
	TOT =100

UNIT I

Introduction to Software Project management: Introduction –Why is Software project management is important? – What is a project? –Software project versus other types of project–Contract Management and technical project management –Activities covered by software project management –plans, methods, methodologies –some ways of categorizing software projects.

Stepwise: an overview of project planning. Programme Management and Project Evaluation: Programme Management –Managing the Allocation of resources within programmes –strategic programme management – creating a programme -aids to programme management –Benefits Management –Evaluation of Individual projects – technical assessment –cost-benefit analysis -cash flow forecasting –cost-benefit evaluation techniques –risk evaluation.

UNIT II

Software Effort Estimation: Where are estimation done? –Problem with over and under-estimates –basis for software estimating –software effort estimation techniques –expert judgment –estimating by analogy. Activity Planning: The objectives –When to plan? –Project schedules –project and activities –sequencing and scheduling activities –Network Planning models –formulating a network model –adding time dimension –forward pass – backward pass. Risk Management: Risk –Categories –Dealing with risk –Risk identification, assessment, planning and management –Evaluating risk to schedule.

UNIT III

Resource Allocation: Introduction -Nature of resources –identifying the resource requirements –scheduling resources –creating critical path –counting the cost –being specific –publishing the resource schedule –cost schedules –scheduling the sequence. Monitoring and Control: Creating framework –collecting the data –visualizing progress –cost monitoring –earned value analysis –prioritizing monitoring –getting the project back to target – change control.

UNIT IV

Managing Contracts: ISO 12207 approach –supply process –types of contract –stages in contract placement, management – Acceptance. Managing People and Organizing Terms: understanding behavior –organizational behavior –selecting the right person for the job –instruction in the best methods –Motivation –Working in groups – becoming a team –decision making –Leadership –organizational structures –dispersed and virtual teams -influence of culture –stress –health and safety.

UNIT V

Software Quality: The place of software quality in project planning –importance of software quality –defining software quality –ISO 9126 -practical software quality measures –product vs process quality management –external standards –techniques to help enhance software quality-quality plans. Small Projects: Introduction –Some problems with student projects –content of a project plan –conclusion.

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Total Periods: 55

COURSE OUTCOME

- Evaluation and selection of projects against strategic, technical and economic criteria with variety of cost benefit evaluation techniques.
- Approach project planning in an organized step by step manner and select an appropriate process model produce an activity plan for a project.
- Identify project risks, monitor and track project deadlines and produce a work plan and resource schedule.
- Plan the evaluation of a proposal or a product and manage people in software environments.
- Understand the importance of teamwork and quality management in software project management.
- Apply these project management tools and techniques in a diversity of fields such as new product and process development, construction, information technology, health care, and applied research.

TEXT BOOK

1. Bob Hughes & Mike Cotterell-"Software Project Management"- 4 Edition, PHI,2010.

REFERENCE BOOK

- 1. Terry Schmidt -"Strategic Project Management made simple"- 2009.
- 2. Harold Kerzner-"Project Management""-2009.

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Approved By

Dr.G Maria Priscilla

16CSE02 DISTRIBUTED COMPUTING

COURSE OBJECTIVES:

- Various issues in the design and implementation of distributed computing systems • the limitations of centralized systems.
- Describe the advantages and approaches used to solve problems in the distributed computing . environment.
- Have the ability to implement selected algorithms for distributed computing systems. •
- Develop a view on the importance of distributed computing.

UNIT I

Distributed computing-History of Distributed Computing-Different forms of computing-strength & weakness of Distributed Computing- Basics of Operating systems-Network basics-software engineering tools.

Interprocesscommunication: IPC program interface-Event Synchronization-Timeouts & Threading - Deadlocks and timeouts - Data Representation - Data Encoding Text Based protocols- Request Response protocols.

UNIT II

Distributed computing paradigms: Paradigms and Abstraction - Example Application - Paradigms for Distributed computing - Trade-offs.

Socket API-Background-Socket Metaphor in IPC-Datagram Socket API-Stream Mode Socket API-Sockets with Nonblocking I/O operations- Secure Socket API.

UNIT III

Client-Server Paradigm:Background-Client-Server Paradigm Issues-Software Engineering for a Network Service-Connection Oriented and Connectionless Servers-Iterative Server and Concurrent Server-Stateful Servers. Group Communication: Unicasting versus Multicasting-An Archetypal Multicast API-Connectionless versus Connection-Oriented Multicast-Reliable Multicasting versus Unreliable Multicasting-The java basic Multicast API-Reliable Multicast API.

UNIT IV

Distributed objects: Message passing versus Distributed objects- An Archetypal distributed Object Architecture-Distributed Object Systems-Remote procedure calls-Remote method Innocation-The java RMI Architecture-The API for the java RMI-Sample RMI Application-Steps for Building an RMI Application-Testing & Debugging. Advanced RMI: Client Callback-Stub Downloading-RMI Security Manager.

UNIT V

Internet Applications:HTML-XML Extensible Markup Language-HTTP-Dynamically generated web contents-Common Gateway Interface(CGI)-Web session and Session State Data.

Common Object Request Broker Architecture- Architecture-CORBA Object Interface- Inter ORB Protocols-Object Servers & Object Clients - CORBA Object references & object services.

Total Periods: 55

Semester	IV
Credit	4
Paper	
Туре	Elective-I
Max.	CIA -30
Marks	CE -70
	TOT =100

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COURSE OUTCOME:

- To study software components of distributed computing systems. Know about the communication and interconnection architecture of multiple computer systems.
- Recognize the inherent difficulties that arise due to distributed-ness of computing resources. Understanding of networks & protocols, mobile & wireless computing and their applications to real world problems.
- At the end students will be familiar with the design, implementation and security issues of distributed system.

TEXT BOOK:

M.L.LIU - "Distributed Computing- principles & Applications "-Pearson Education- 2010.

REFERENCE BOOK:

- 1. Andrew.S.Tananbum-"Distributed Systems- Principles & Paradigms" Pearson Education-2010.
- 2 George Coulouris- "Disributed systems concept & design "-Tata MCGraw Hill Edition 2010.

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Approved By

Dr.G Maria Priscilla

16ITC03 CORE XII- RDBMS

(Common to Computer Applications, Computer Science and Information Technology)

COURSE OBJECTIVES

- Enable the students to understand the concept of relational database system
- Perform E-R Model in a given situation and provide the foundation for development of Relational Database structure
- To present the use of Structured Query Language (SQL) and its syntax.
- To apply Normalization techniques to database.
- Emphasize the role, importance and use Application design and development

UNIT-I

Introduction:Database system applications- Purpose of Database Systems-view of Data-Database Design-Database languages-Relational Databases-Data Storage and querying- Transaction Management-Database users and Administrators

UNIT-II

Entity-Relationship Model: Basic Concepts-Mapping Constraints-Removing Redundant attributes in Entity sets-ER diagrams

Relational model: Structure of Relational Databases -Database schema-keys-Schema Diagrams-Relational Query Languages-Relational operations

UNIT-III

SQL: Overview of SQL Query Language-SQL data Definition-Basic structure of SQL queries -Set Operations-Aggregate Functions-Null Values –Join Expressions- Views-Transactions.

UNIT-IV

Relational Database Design: Features of Good relational Designs-Atomic Domains and First Normal Form-Decomposition using Functional Dependencies- Functional Dependency Theory-Algorithms for Decomposition-Decomposition using multivalued dependencies

UNIT-V

Advanced SQL: Accessing SQL from a Programming Language-Functions and Procedures-Triggers Application Design and Development: Application Programs and user Interfaces -Web Fundamentals-Application Architectures-Application Performance-Application Security-Encryption and its applications.

Total Periods: 55

COURSE OUTCOME

- To describe the concepts of database system and its use.
- Understand the basic concepts of the database and data models
- Design a database using ER diagrams and map ER into Relations and normalize the relations
- Competent in the use of SQL, to Design and build database system for a given real world problem.
- To develop applications using functions, procedures and triggers

TEXT BOOK

1. Abraham silberschatz, Henry F Korth, S. Sudarshan, Database SystemConcepts, McGraw Hill International, Sixth Edition, 2011

Unit I - Chapter 1 Unit II - Chapter 2,7 Unit III - Chapter 3,4 Unit IV - Chapter 8 Unit V - Chapter 5,9

REFERENCE BOOKS

Remiz Elmasri, Shamkant B.Navathe, Fundamentals of Database Systems, Pearson Education, Seventh Edition, 2011.
 C.J.Date, An Introduction to Database Systems, Addison wesley, Sixth Edition, 2012



Prepared by: Mrs.S.B.MAHALAKSHMI Nicho

Approved by: Dr.N.SUMATHI

SemesterIVCredit5PaperCORETypeMax.CIA -30MarksCE -70

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16ITC04 CORE XIII-Practical -7 RDBMS LAB

(Common to Computer Applications, Computer Science and Information Technology)

COURSE OBJECTIVES

- To apply the various constraints in RDBMS
- To create custom reports.

1. Create tables and write simple queries using

i) Comparison operators

ii) Relational operators

iii) Logical operators

iv) Set operators

v) Ordering & grouping records.

2. Writing queries using built in functions.

3. Updating and altering tables using SQL.

4. Creation of table with constraints Consider the following relations for a order processing database application in a company.

CUSTOMER(custno:int , cname:string , city:string)

ORDER(orderno:int , odate:date , custno:int , ord_amt:int)

ORDER_ITEM(orderno:int , itemno:int , quantity:int)

ITEM(itemno:int , unitprice:int)

SHIPMENT(orderno:int , warehouseno:int , ship_date:date)

WAREHOUSE(warehouseno:int , city:string)

(1)Create the above tables by properly specifying the primary keys and foreign keys.

(2)Enter at least five tuples for each relation.

(3)Produce a listing: custname ,No_of_orders , Avg_order_amount , where the middle column is the total Number of orders by the customer and the last column is the average order amount for that customer.

(4)List the orderno for orders that were shipped from *all* the warehouses that the company has in a specific city.

(5)Demonstrate the deletion of an item from the ITEM table and demonstrate a method of handling the rows in

theORDER ITEM table that contains this particular item.

(6)Create View commands on the result set of SQL statement.

PL/SQL

5. Creation of student information table and write PL/SQL block to find the total, average marks and results.

6. Write a PL/SQL block to find the electricity bill.

7. Write a PL/SQL block to implement the concept of Join

TRIGGERS

8. Create a database trigger to check the validity of the record.

FUNCTIONS

9. Write a recursive function to find the factorial of a given number.

REPORTS

10. Creation of report for student's information system.

COURSE OUTCOME

- Design and implement a database schema for a given problem domain.
- Understand the use of Structured Query Language (SQL) and its syntax.
- To populate and query a database using SQL DML/DDL commands.
- To perform programming in PL/SQL including stored procedures, functions and Triggers.



Prepared by: Mrs.S.B.MAHALAKSHMI

Total Periods: 44

Approved by Dr.N.SUMATHI

Semester	IV
Credit	3
Paper	Core
Туре	Practical
Max.	CIA -30 +
Marks	CE -70

16ITC06-Elective I-SOFTWARE ENGINEERING

(Common to all branches of Computer Science, Computer Application and Information Technology)

COURSE OBJECTIVES

- To educate the students to know Different life cycle models.
- To perform Requirement dictation process and Analysis modeling and specification. -
- To perform Architectural and detailed design methods.
- To Apply Implementation and testing strategies.
- To check software quality, Verification and validation techniques.

UNIT-I INTRODUCTION AGeneric View of Process – Process Models-The Waterfall Model-Incremental Model-Evolutionary Model-Specialized Model-The Unified Process–Agile Process – Agile Models – Software Cost Estimation – Planning – Risk Analysis – Software Project Scheduling.	11
UNIT–II REQUIREMENT ANALYSIS System Engineering Hierarchy – System Modeling – Requirements Engineering: Tasks- Initiating The Process-Eliciting Requirements-Developing Use Cases-Negotiating Requirements-Validating Requirements – Building the Analysis Models: Concepts.	11
UNIT-III SOFTWARE DESIGN Software Design :Design Concepts – Design Models – Pattern Based Design – Architectural Design – Component Level Design – Component – Class Based and Conventional Components Design – User Interface – Analysis and Design.	11
UNIT-IV SOFTWARE TESTING Software Testing – Strategies: Conventional - Object Oriented – Validation Testing – Criteria – Alpha – Beta Testing- System Testing – Recovery – Security – Stress – Performance - Testing Tactics – Testing Fundamentals-Black Box – While Box – Basis Path-Control Structure.	11
UNIT–VSCM AND QUALITY ASSURANCE SCM And Quality Assurance :Software Configuration And Management-Features-SCM Process-Software Quality Concepts – Quality Assurance – Software Review–Technical Reviews – Formal Approach to Software Quality Assurance – Reliability – Quality Standards – Software Quality Assurance Plan	11

Total Periods= 55

COURSE OUTCOMES

Upon successful completion of course the students will have

- Apply knowledge of science, and engineering models.
- Analyze the requirement analysis to build a software components.
- Design and conduct experiments, as well as to analyze and interpret data
- Test the software modules using the testing techniques.
- Understand the Software quality standards and assurance.

TEXTBOOK:

Roger Pressman.S., Software Engineering: A Practitioner's Approach, Sixth Edition, McGraw-Hill, 2005. ISBN: 007-124083-7.

Semester	IV
Credit	4
Paper	Elective-I
Туре	
Max.	CIA -30 +
Marks	CE -70

REFERENCEBOOKS:

- Sommerville, Software Engineering, Eighth Edition: Addison Wesley, 2007. ISBN: 032-131379-8.
- Carl Dichter, Mark Pease, Software Engineering with Perl, Prentice Hall, 2007. ISBN: 013-016965-X.
- James F Peters, WitoldPedryez, Software Engineering-An Engineering Approach, John WitoldPedrycz, 2004. ISBN: 997-1513099.
- P. Fleeger, Software Engineering, Third Edition, Prentice Hall, 1999. ISBN: 013-146913-4.
- Carlo Ghezzi, Mehdi Jazayari, Dino Mandrioli, Fundamentals Of Software Engineering, Prentice Hall Of India 1991. ISBN: 013-820432-2.



Nicho

Prepared by:

S Prahadeeswaran

Approved by: Dr N Sumathi

Semester

Paper type

Credit

Max.

Marks

ALLIED IV: 16CS402 BUSINESS ACCOUNTING

COURSE OBJECTIVES

•	To familiarize the	basic concepts	of accounting ar	nd its Features
			0	

To develop conceptual understanding of fundamentals of financial accounting, cost accounting and management accounting

11 **UNIT-I INTRODUCTION TO ACCOUNTING** Introduction - Accounting Principles - Accounting Concepts and Conventions -Accounting rules -Journal -Ledger Subsidiary book including Cash Book -Bank Reconciliation Statement -Rectification of errors -Trial balance.

UNIT-II FINAL ACCOUNTS PREPARATION

Preparation of Final Accounts with simple adjustments.

UNIT-III COST ACCOUNTING AND STORES LEDGER

Cost accounting -meaning, objectives -Elements - Cost Sheet Preparation -Stores ledger -LIFO - FIFO-Average Stock- Weighted Average Stock.

UNIT-IV MANAGEMENT ACCOUNTING AND FINANCIAL STATEMENT ANALYSIS 11

Management Accounting -Meaning -Merits & Demerits- Financial Statements Analysis-Ratio Analysis(Solvency & Profitability ratios only)

UNIT-V BUDGETING AND CLASSIFICATION

Budgeting -Meaning -Advantage - Classification of budgets - Preparation of Production budget, Sales budget, Cash budget, and Flexible budget.

Total Periods=55

Course Outcomes

- Ability to understand the Principles of Accounting, branches of Accounting and its Application.
- Ability to ascertain Profit / Loss earned by the business and its financial position.
- Capability of preparing cost sheet and maintaining stores ledger.
- Ability to Asses the financial Performance of the business by applying Management Accounting Concepts.
- Able to prepare various budgets for managerial decision making and policy framing

TEXT BOOKS

1)T.S. Reddy and A.Murthy -"Advanced Accounting"- -Margham Publications-2016 Jain and Narang -"Cost Accounting"-

Kalyani Publishers,13th edition-2014 2) R.K.Sharma & Shashi K. Gupta - "Management Accounting"-

REFERENCE BOOKS

1)S.P-. Jain and K.L Narang "Advanced Accounting"- -kalyani publications-20th Edition-2014 A. Murthy and 2)S. Gurusamy Cost Accounting"-, vijay Nicole-2nd edition-2014

3)Khan & Jain- "Management Accounting"- Tata McGraw Hill,6th edition -2013



Verified by Dr V Nirmaldevi



Approved by Dr V Nirmaldevi

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IV

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Allied

CIA-30

CE-70 Total-100

16CSC06-PHP Programming

(Common to all branches of Computer Science, Information **Technology and Computer Application**)

Semester	V
Credit	3
Max.	CIA -30
Marks	CE -70
	TOT -100

Course Objective:

- Students should be able to design and implement a basic website.
- Students should be able to implement different navigation strategies.
- Students should be able to develop simple back-end database to support a website.
- Students should be able to recognize and evaluate website organizational structure and design elements

Unit 1

Introduction: Introduction to PHP, Start and End Tags of PHP, Data types in PHP, Variables, Constants, operators and Expressions, printing data on PHP page, Control statements: if, switch case, for, while, do while. Arrays: Initialization of an array, Iterating through an array, Sorting arrays, Multi-dimensional array, Array Functions. 9

Unit 2

Strings: string functions - converting to and from strings - Formatting text strings - Functions: creating functions in PHPpassing functions some data - passing array to functions - passing by reference - PHP Conditional functions - variable functions – nesting functions.

Unit 3

Form Data Handling: \$ GET, \$ POST, \$ REQUEST Variables, Cookies handling: setting a cookie – reading a cookie – deleting cookie. Session Management: storing data in sessions – writing a Hit counter using sessions. Exception Handling: Understanding Exception and error, Try, catch, throw.

Unit 4

File Handling: Opening and closing a file, Coping, renaming and deleting a file, getting file size with file size, reading and writing with binary files, locking files, Drawing images on the server: creating an image – displaying images in HTML Pages - Drawing lines, rectangles, ellipse, arc, polygons, figures, text - copying images.

Unit 5

Working with databases: Creating MySQL database, creating table, putting data into new database - Accessing the database in PHP – updating databases – designing simple applications.

Total Periods: 45

Course Outcome

Having successfully completed this course the student will be able to

- Utilizing the basic concept of statements and arrays. ٠
- Implement functions and browser handling power of PHP.
- Imparting Database applications, file handling, Cookies in the webpage.
- Design and Implement Interactive Web Site using Forms and Files.
- Evaluate website organizational structure and design elements.

TEXT BOOK

1. Steven Holzner, "The Complete Reference PHP Covers PHP 5.2", Tata McGraw-Hill Edition 2008. (chapters covered 1,2,3,4,9,10,11,14)

REFERENCES

1. Steve Svehring, "PHP6 and MySql6 Bible", Pearson Education, 3rd edition 2014

2. Vickram Viswani," PHP Programming Solutions", Pearson Education, 3rd edition 2012.

Prepared by

Approved by

M.Praneesh

Dr.G.Maria Priscilla

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16CSC03- JAVA PROGRAMMING

(Common to Computer Science, Information Technology and Computer Application)

COURSE OBJECTIVES:

To acquire knowledge about the programming concepts using Java	Semester	V
and write programs	Credit	5
To attain the knowledge with the object oriented programming	Paper Type	Core
language for the Internet		CIA-30
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To attain the knowledge with the applets to designing a web page.

UNIT – I –OVERVIEW of JAVA

An overview of Java: Object oriented programming – Java features – Java environment - Data types, variables and arrays. Operators- Expressions - Control Statements: Branching statements - Iteration statements - Jump statements- Sample java program

UNIT – II – CLASSES and OBJECTS

Classes - Objects - Methods - Constructors - The this keyword - finalize () method - Overloading methods - Returning objects - Recursion-Static - Final - Nested inner classes- Command line arguments - Inheritance.

UNIT – III – PACKAGES and INTERFACES

Packages and Interfaces: Packages - Access protection - Importing packages - Interfaces - Exception handling: Fundamentals – Exception types– Try and catch – Multiple catch – Nested try – throw – throws - finally - Build in exception.

UNIT – IV – MULTITHREAD PROGRAMMING

Multithread programming: Introduction, Creating -Threads Extending -Thread Class-Stopping and Blocking a thread-Life cycle of a thread-Using thread methods-Thread Exceptions-Thread Priority-Synchronization-Implementing a run able Interface.

UNIT – V – APPLET CLASS

The Applet Class: Basics – Building applet code – Applet life cycle– Creating an executable applet – Designing a web page - Running the applet - Getting input from the user - Graphics programming: The graphic class - Lines and rectangles - Circles and ellipses - Using control loops in applets - Drawing bar charts

Course Outcome Total Hours 66 Having successfully completed this course the student will be able to

- Understand the basic features of java Programming •
- Understand the classes and objects of java programming •
- Know the concept of packages ,interfaces and threading in java
- Understand the socket concept and its types. •
- Understand the applet concept.

TEXT BOOK

1. Programming with Java, 5th Edition, E. Balagurusamy, Tata McGraw Hill Pub.Ltd., New Delhi. Unit-1 :Chapters 1,3-7, Unit-2 : 8, Unit 3 : 10,11,13 Unit 4: 12, Unit 5: 14,15

REFERENCE BOOKS

"The Complete Reference" Java2, 5th Edition, Patrick Naughton, Herbert Schildt, Tata McGraw 1. Hill Pub. Ltd., New Delhi.

Verified by

Approved by

CE -70 Total-100

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16CSC04- JAVA PROGRAMMING LAB

(Common to Computer Science, Information Technology and Computer Application)

COURSE OBJECTIVES:

- be familiar with the main features of the Java language.
- be able to write Java programs to solve a well specified problem.
- understand a Java program written by someone else,
- be able to debug and test Java programs;

List of programs

- 1. Write a Program to find the greatest of three numbers.
- 2. Write a program using arithmetic, relational and logical operators.
- 3. Write a program to perform String handling functions
- Write a program to read student's detail using three separate base classes (Office, Physical, Test). Using the above three base classes create a derived class report and print details (using multi-level inheritance).
- 5. Write a program to create a Java Package
- 6. Write a program to prepare pay slip using Interfaces concept
- 7. Write a program to handle the following Exceptions (a) Null Pointer Exception

(b) Arithmetic exception (c) I/O exception (d) ArrayIndexOutof Bounds exception without using throws exception class.

8. Write a program to explain the multithreading with the use of multiplication tables.

Three threads must be defined, with each creating one multiplication table

- 9. Write a program to display all shapes with available built in functions using applets.
- 10. Write a Applet program to create a registration form of student.

Total Hours:66

Semester	V
Credit	4
Paper Type	Core
Max. Marks	CIA-30
	CE -70
	Total-100

Course Outcome

Having successfully completed this course the student will be able to

- Be able to understand the object-oriented approach in programming.
- Students should be able to analyze and design a computer program to solve real world problems based on object-oriented principles.
- Design and implement simple GUI applications

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Approved by

16CSC05-PHP Programming Lab

(Common to all branches of Computer Science, Information Technology and Computer Application)

Course Objective:

- To understand various methods to handle string and array.
- To be aware of the OOPs concepts in PHP.
- To know the file handling techniques.
- To create database and to manipulate data.
- To be familiar with the graphics methods of PHP

Exercises

- 1. Develop a PHP Program for associative array.
- 2. Perform String handling functions in PHP
- 3. Write a PHP Program to find factorial number.
- 4. Write a PHP Program to read form data.
- 5. Write a PHP Program to implement Overloading and overriding
- 6. Write a PHP Program for File handling.
- 7. Develop PHP Program to Create a Database and to Insert and Delete data.
- 8. Write a PHP program to store current date-time in a COOKIE and display the 'Last visited on' date-time on the web page upon reopening of the same page.
- 9. Write a PHP Program for drawing images on a web page.
- 10. Design of admission form using PHP MYSQL

Course Outcomes:

Having successfully completed this course the student will be able to

- Handle array and string handling methods.
- Implement OOPs Concepts in an application.
- Create a database in MYSQL and to manipulate data into it.
- Store information about client's session using Cookies.
- Design an interactive webpage with graphical techniques.

Prepared by

M.Praneesh

Semester	V
Credit	3
Paper Type	Core
Max.	CIA -30
Marks	CE -70
	TOT =100

Total Hours 66

Approved by



Dr.G.Maria Priscilla

OPEN ELECTIVE II –INTERNET OF THINGS	Semester	V
	Credit	3
COURSE OBJECTIVES	Paper	OPEN
Understand the communication technologies in IoT	Туре	ELECTIVE-II
 Know the IoT protocols and web of things Know the various applications of IoT 	Max. Marks	CIA-30 CE -70
	Marks	Total-100

UNIT I

Introduction to Internet of Things: Definition & Characteristics of IoT - Physical design of IoT- Logical design of IoT- IoT Levels- Four Pillars of IoT

UNIT II

IoT Architecture: IoT Reference Architecture - OGC Architecture - IoT Reference model - Domain model information model - function model

UNIT III

Protocols: Data link Protocol - Network layer Routing Protocols - Network layer Encapsulation Protocols -Session Layer Protocols - Transport Layer Protocols.

UNIT IV

Web of Things: web of Things versus Internet of Things - Two pillars of the web - Architecture standardization for WoT - Platform Middleware for WoT - Unified Multitier WoT Architecture.

UNIT V

Applications: Home Automation - Cities - Environment - Energy - Retail - Agriculture - Industry - Health and Life style.

Total Periods : 45

COURSE OUTCOMES

Having successfully completed this course the student will be able to

- Understand the basis of IoT and its characteristics.
- Understand the functionality of various architectures of IoT.
- Analysis of various Protocols Standards and providers.
- Recognize the importance of Web of Things.
- Interpret various Applications of IoT.

TEXTBOOKS

1. Arshdeep Bahga, Vijay Madisetti, "Internet of Things - A hands-on approach", Universities Press, 2015

REFERENCEBOOKS

- 1. David Easley and Jon Kleinberg, Networks, Crowds, and Markets: Reasoning About a Highly Connected World, Cambridge University Press - 2010.
- Olivier Hersent, David Boswarthick, Omar Elloumi, "The Internet of Things Key applications and Protocols", 2. Wiley, 2012
- 3. Honbo Zhou, The Internet of Things in the Cloud: A Middleware Perspective--CRC Press 2012.
- 4. Dieter Uckelmann; Mark Harrison; Florian Michahelles- (Eds.) "Architecting the Internet of Things" -- Springer --2011

Prepared by



M.Praneesh

Approved by





Dr.G.Maria Priscilla

B.Sc Computer Science (2016 Batch)

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PERSONALITY, APTITUDE AND CAREER ENHANCEMENT PACE – V

Course Objectives

- To recap concepts learnt in PACE 3 & 4 and introduce adequate soft skills required for the business environment to the students.
- To introduce concepts on Creativity and Time Utilization Management.
- To give extensive exercises on Quantitative Aptitude, Reasoning Aptitude & Verbal Aptitude, by inculcating all the company-specific papers those are required to participate effectively in the Placement Process.
- To introduce higher level concepts on Personal Effectiveness Skills and Resume Building.
- To reiterate the importance of Impression Management and its effectiveness

Unit - I: Quantitative Ability – Company Specific

Number System – Divisibility rules, Unit digit, BODMAS, HCF and LCM. Averages AP and GP – Percentage – Increase and decrease concepts. Profit and Loss – Interest Calculation – Simple interest and Compound interest. Time Speed Distance – Problems on Trains, Boats and Stream, races. Time and Work – Pipes and cistern. Permutation and Combination – Probability – Ratio Proportion, Problems on ages. Mixtures and Solutions – Alligation.

Unit - II: Reasoning Ability - Company Specific

Data Arrangements – Linear and Circular arrangement. Data Interpretation – Alpha and Numeric series – Odd man out. Coding and Decoding. Venn diagram – Set language properties – Syllogism – Data Sufficiency – Applications of quantitative ability concept. Clocks and Calendars.

Unit - III: Verbal Ability - Company Specific

Vocabulary – Etymology, Root words, verbal analogy. Reading – Reading Comprehension, Jumbled Paragraphs and Jumbled Essays. Application of Grammar concepts – Sentence Construction, Sentence Improvisation. Critical Reasoning – Statement/Argument – Premises, Inference, Conclusion, Strengthening and Weakening of arguments.

Unit - IV: Group Discussion Skills

Lateral Thinking – Out of Box thinking, Creative Problem-solving, Practical Application. Anger Management – Causes of Anger, Channelizing Anger, Effective Anger management – Stress Management – Causes of Stress, Importance of Eustress, Steps to effective Stress Management. Quizzes related to current affairs.

Unit - V: Interview Skills

Impression Management – Psychology behind Professionalism, Powerful impressions. Handling Common Questions in Interviews. Ethics and Integrity vs Psychometric test. Time Utilization Management – Methods and Strategies. Reviews – Resume Building, Goal-setting and Personality.

Course Outcomes

On the successful completion of PACE 5, the students would be able to

- Utilize time, being creative and have more insight on business environment.
- Equip themselves adequate skill-set that are required to participate effectively in the Placement Process.
- Develop Personal Effectiveness Skills and Resume Building.
- Make use of impression management in-terms of participating effectively in interviews.

References

- 1. Developing Communication Skills by Krishna Mohan & Meera Banerji
- 2. Verbal Ability and Reading Comprehension by Arun sharma
- 3. Word Power Made Easy by Norman Lewis
- 4. High School English Grammar by Wren and Martin
- 5. Art of Social Media by Guy Kawasaki
- 6. A Modern Approach to Verbal and Nonverbal Reasoning by Dr. R. S. Aggarwal
- 7. A Modern A Modern Approach to Verbal by Dr. R. S. Aggarwal
- 8. A Modern Approach to Nonverbal Reasoning by Dr. R. S. Aggarwal
- 9. A Practical Course in Spoken English by J.K.Gangal
- 10. Effective English Communication for you by V.Shamala

16CAC05 - OPERATING SYSTEM

(Common to all branches of Computer Science, Information Technology and Computer Application)

COURSE OBJECTIVES

- To impart the students the basic concepts of Operating Systems, its functions and . services.
- To familiarize the students with various views and management policies adopted by Operating Systems.
- To brief the students about resource management of Operating Systems.
- To provide the students the knowledge of Operating System synchronization, behavior and related issues.

PREREQUISITE

. Basic courses on Computer Organization, Data Structures and Computer Programming

UNIT-I

13 Introduction: What is an Operating System? - Simple batch systems - Multi programmed Batch System -Time Sharing systems - Parallel systems - Distributed systems - Real time systems. Operating system structures: System components - Operating system services - system calls - system

programs - system structure ..

UNIT-II

Process Management: process concept - process scheduling - operation on processes - cooperating processes, Inter process Communication.

CPU Scheduling: Basic concepts - scheduling criteria - scheduling Algorithms

Deadlocks: Definition - Deadlock characterization - Deadlock prevention - Deadlock Avoidance - Deadlock detection - Recovery.

UNIT-III

Memory Management: Background - swapping - contiguous memory allocation - paging - Segmentation. Virtual Memory: Background - Demand Paging, Page replacement - page replacement Algorithms, Thrashing

UNIT-IV

13 File systems: File concept - Access methods - Directory structure - protection - File system - structure -Allocation methods - Free space management Secondary Storage Structure: Disk structure, Disk scheduling -Disk management.

UNIT-V

Case study: Linux - Design principles - kernel Modules - Memory management - File systems -Input & output - security.

COURSE OUTCOMES

Upon the completion of Operating Systems theory course, the student will be able to:

- Understand the role of Operating System as system software.
- Compare and contrast various algorithms used for management of memory, CPU scheduling, file handling and I/O . operations.
- Illustrate the various Operating System concepts.
- Demonstrate the role of process synchronization.
- Analyze Linux system architecture.

TEXTBOOKS

1. Silberschatz Galvin,"OPERATING SYSTEM CONCEPTS", Sixth Edition, Addison -- Wesley 2011 UNIT I (Chapter 1,3) UNIT II (Chapter 4,6,8) UNIT III (Chapter 9,10) UNIT IV (Chapter 11,12,14) UNIT V (Chapter 20,21)

REFERENCE BOOKS

1. Tanenbaum, "OPERATING SYSTEMS: DESIGN & IMPLEMENTATION", PHI, 2nd Edition, 2002.

2. William Stallings, "OPERATING SYSTEMS", PHI, Sixth Edition, 2009

3. Dietal, "OPERATING SYSTEMS", Pearson Education Asia, Third Edition, 2003.

BOS Chairman Approved By

Semester VI Credit 5 Paper Core VIII Type Max. CIA:30 + Marks CE:70

13

13

13

Total Periods:65

Course Coordinator Prepared By

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B.C.A(2016 Batc

Semester	VI
Credit	3
Paper Type	Practical - XI
Max. Marks	CIA:30 + CE :70

16CAC06 - OPERATING SYSTEM LAB

(Common to all branches of Computer Science, Information Technology, and Computer Application)

COURSE OBJECTIVES

- · To demonstrate operating systems concepts by writing Linux shell scripts
- · To gain practical experience on implementing and various algorithms in MS Windows XP.

PREREQUISITE

Basic knowledge on Principles of Computer operating system

LIST OF EXPERIMENTS

- 1. Basic LINUX commands.
- 2. Write a shell script to do the following
 - a Fibonacci series.
 - b. Factorial of given number.
 - c. To convert the decimal number to binary number.
- 3. Write a shell script to do the following
 - a. To check whether the given string is Palindrome or not.
 - b. To count number of words, lines in a given file
- 4. Write a shell script for the following
 - a. To find whether the given input is file/directory.
 - b. To delete a particular pattern in file.
 - c. To find the user login.
 - d. To set the attributes of a file
 - e. To compare two files
- 5. Write a shell script for student evaluation.
- 6 Write a shell script for employee details using files.
- 7. Implementation of CPU scheduling algorithms.
- Implementation of memory allocation methods.
- Implementation of page replacement algorithms.
- 10. Implementation of disk scheduling algorithms.

COURSE OUTCOMES

- Upon the completion of Operating Systems practical course, the student will be able to:
- Run various LINUX commands using Linux Operating System
- Code shell script in LINUX Operating System.
- Implement CPU scheduling, memory allocation, page replacement and disk scheduling algorithms.

Total Periods : 44 Hours

BOS Chairman Approved By

Baroley

Course Coordinator Prepared By

B.Sc. Computer Science (2016 Batch)

16CS601-Android Programming Lab

Course Objective:

The student should be made to:

- Know the components and structure of mobile application development frameworks for Android mobiles.
- Understand how to work with various Android application frameworks.
- Learn the basic and important design concepts and issues of development of Android applications.
- Understand the capabilities and limitations of mobile devices.

Exercises

- 1. Design an application that gives Hello world as an Input message
- 2. Develop an application that uses GUI component Font color
- 3. Develop an application that makes use of different background color
- 4. Develop an application that uses Layout Managers and event listeners.
- 5. Write an application that draws basic graphical primitives on the screen.
- 6. Design a native calculator application
- 7. Develop an application that makes use of database.
- 8. Develop an application to display the location information.
- 9. Upload your first android app on play store
- 10.Develop an application to implement the multithreading

Course Outcomes:

On completion of this course, the student will be able to:

- Apply the logic of Multithreading to solve an Android application.
- Identify real world hardware and software issues and solve the problem based on Layout managers.
- · Examine android application and Content provider for various mobile devices
- Predict the Native content provider for the computing practice.

Prepared by

M.Praneesh

Approved by

las

Dr.G.Maria Priscilla

Semester	V	
Credit	3	
Max.	CIA -30	
Marks	CE -70	- 1
	TOT =100	_

16CSE03 SYSTEM ANALYSIS AND DESIGN

COURSE OBJECTIVES

- To educate the students to know system Characteristics.
- To perform Requirement dictation process, planning and Analysis modeling and specification.
- To perform Architectural and detailed design methods.
- To Apply Implementation and testing strategies.
- To check software Security techniques.

UNIT 1 : INTRODUCTION

The system concept: Definition, Characteristics of a system - types of systems - The System Development Life Cycle: what is a problem? - Feasibility study- Analysis- Design- Implementation - Maintenance - the Role of System Analyst.

UNIT II SYSTEM PLANNING AND INITIAL INVESTIGATION

Bases for planning in System Analysis: Dimensions of Planning- Determining user's information requirements -Background Analysis - Fact finding - Fact Analysis - Determination of Feasibility- Information Gathering Tools

UNIT III STRUCTURED ANALYSIS

What is structured Analysis ? - The Tools of Structured Analysis: DFD - Data Dictionary - Decision Tree and Structured English - Decision Tables - Feasibility study: Feasibility considerations - steps of feasibility analysis -Feasibility Report - Cost benefit Analysis: Cost benefit Analysis categories - procedure.

UNIT IV SYSTEM TESTING AND QUALITY ASSURANCE

Why System Testing? - What Do we Test for? - The Nature of Test data- Quality Assurance: Quality Assurance Goals in the Systems Life Cycle - Levels of Quality Assurance - The Role of the Data Processing Auditor

UNIT V SECURITY

System Security: Definitions - Threats to System Security - Control Measures - Disaster/Recovery Planning: The Plan. Ethics in System Development: Ethics codes and Standards of Behavior

COURSEOUTCOMES

On completion of this course, the students will be able to

- Analyze System Development Life Cycle
- Design logical and physical systems using a variety of tools and techniques, methods.
- Compare alternate methodologies used in developing business information systems.
- Differentiate between quality control, quality management and quality assurance
- Analysis of system security and development of Ethics codes.

TEXT BOOK:

1. Elias M.Awad, "System Analysis and Design" Galgotia Publications Pvt Ltd, 2012. (Chapter covered: 1,2,3,4,5,6,7,8,12,16)

WEB LINKS

https://www.tutorialspoint.com/system_analysis_and_design/system_analysis_and_design_overview.htm https://www.youtube.com/watch?v=pOzSIT2Chi0

REFERENCE BOOK:

1. Jeffrey A.Hoffer "Modern Systems Analysis and Design" Pearson Education, 2010

Prepared by:

Semester	VI
Credit	4
Paper Type	Elective-II
Max. Marks	CIA -30 + CE -70

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Total Periods 55

Approved by:

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Dr.G.MARIAPRISCILLA

16CSE04-SYSTEM SOFTWARE

COURSE OBJECTIVES

- To know the design and implementation of assemblers. .
- To know the design and implementation of linkers and loaders
- To have an understanding of macro processors. .
- To have an understanding of system software tools. .

UNIT I INTRODUCTION

System software and machine architecture - SIC Machine architecture - Data and instruction formats - addressing modes - instruction sets - I/O Programming

UNIT II ASSEMBLERS

Basic assembler functions - Assembler algorithm and data structures - machine dependent assembler features instruction formats and addressing modes - program relocation - Machine independent assembler features -Literals - Symbol-defining statements - Expressions - Onepass assemblers and Multi pass assemblers

UNIT III LOADERS AND LINKERS

Basic loader functions - design of an absolute loader - a simple Bootstrap loader - Machine dependent loader features - Relocation - machine independent loader features - Automatic library search - loader options - linkage editors - Dynamic linking.

UNIT IV MACRO PROCESSORS

Basic Macro Processor functions - Macro Definition and Expansion - Macro Processor Algorithm and data structures - machine independent macro processor features - concatenation of Macro Parameters - Generation of unique labels - conditional macro expansion - keyword macro parameters - Macro within Macro.

UNIT V SYSTEM SOFTWARE TOOLS

Text Editors - overview of editing process - user Interface - Editor Structure - interactive debugging systems debugging functions and capabilities - relationship with other parts of the system - user interface criteria.

Total Periods= 55

COURSEOUTCOMES

On completion of this course, the students will be able to

- Analyze the system software architecture.
- Implement Assembler functions based on global environment of System software.
- Design logical and physical system of loaders and linkers
- Analyze the component of system software such as Macro processor.
- Apply optimal solution for text editors and user interface criteria.

TEXT BOOK

Leland L.Beck, D.Manjula, "System Software- An Introduction to System Programming", Pearson Education, 3rd Edition 2012. (Chapters covered: Chapter 1, 2, 3, 4, 7)

WEB LINKS

https://www.youtube.com/watch?v=Bv0990LqYks https://www.youtube.com/watch?v=eEHkj8hUeg4 https://www.youtube.com/watch?v=Xu_H_D0Gz38 https://www.tutorialspoint.com/computer_fundamentals/system_software.asp

REFERENCE BOOKS

1. D. M. Dhamdhere, "System Programming and Operating Systems", 4 th Edition, Tata McGraw-Hill, 2011 2. John R. Levine, Linkers & Loaders - Harcourt India Pvt. Ltd., Morgan Kaufmann Publishers, 2010.

Prepared by M.PRANEESH

Semester VI 4 Credit Elective-II Paper Type CIA -30 + Max. Marks CE -70

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10

Approved by

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Dr.G.MARIAPRISCILLA

16CSE05-Client /Server Technology

Course Objectives

- Apply latest client server technologies to develop Client Server applications
- Configure and manage to apply services in web servers
- . Ability to design and conduct experiments as well as to analyze and interpret

UNIT I

Client Server Computing - What is Client/Server - File servers, Database servers, Transaction servers, Group ware servers, Object servers, Web servers - FAT servers or client/server - Client/server Building blocks.

UNIT II

Client/Servers and operating systems - the Anatomy of a server program - Needs of Client/server from an OS server scalability - Client Anatomy - Client and server OS trends - client OS and Server OS. NOS: Creating the single system image -Remote procedure calls (RPC) - Messaging and Queuing: The MOM Middleware.

UNIT III

SQL Database Servers: What does SQL do? - The ISO standards- What does a database server do? - Stored procedures, Triggers and rules. Data warehouses - OLTP (On-line Transaction Processing) - Decision Support systems (DSS) - Executive Information System (EIS) - comparing Decision Support and OLTP Systems -Production Vs Information Databases - The Data ware house

UNIT IV

Client/Server Transaction Processing - the ACID properties - Transaction Models - TP monitors - Client/server groupware - Importance of groupware - What is Groupware- The components of Groupware. Distributed Objects, CORBA style - Object management Architecture-compound documents - The compound document frame work.

UNIT V

Web client/server - What is URL? - Shortest HTML tutorial - HTTP - 3 tier client/server, web style - HTML Web based forms - CGI: The server slide of the Web - Web security - The Internet and the Intranets -Compound Documents and the object Web - The DCOM/OLE - Object Web - The CO-RBA object web.

Total Periods: 55

Course Outcome

On completion of this course, the students will be able to

- Interpret client server computing concepts
- Understand DSS and EIS systems.
- . Analyze the various server functions
- Apply the ACID properties in transaction models
- Analyze the object web.

TEXT BOOK

1. Robert Orfali, Dan harkey& Jeri Edwards "The Essential Client/Server Survival Guide", Galgotia Publications private Limited. Revised, Edition 2012 (Chapter covered : 1,2,3,4,6,8,12)

WEB LINKS

www.tutorialspoint.com/Client-Server-Computing https://learntomato.com/what-is-a-client-what-is-a-server-what-is-a-host/ https://www.youtube.com/watch?v=Zfmk0GtANNs https://www.youtube.com/watch?v=QNIvF7vBVic

REFERNCE BOOK

1. Paul E. Renaud"Introduction to Client/Server Systems: A Practical Guide for Systems Professionals" Wiley Professional Computing Publications, 2nd Edition, 2014,

Prepared By

D LAC KAVITHA.P

Approved by leas

Dr.G. MARIA PRISCILLA

Semester VI Credit 4 Paper Core Type Theory Max. CIA -30 Marks CE -70 TOT =100

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16CS602-Android Programming

Course Objectives

Student should be made to

- Understand the Components and plat form for Android programs
- · Know the structure of Android Architecture to validate Mobile Applications
- · Learn the basic design concepts and databases for Android Applications

UNIT I INTRODUCTION

Introduction to Android – Android SDK Features – Android Application Architecture – Creating your first Android application – Types of Android Applications – Developing for mobile and embedded devices: Hardware Imposed design considerations – Developing for Android – Android Development Tools

UNIT II CREATING APPLICATIONS

Creating Applications and Activities: What makes an Android Application? – Application Manifest file – Externalizing resources: creating resources – Android Application lifecycle –understanding an application priority and its process states – introducing the Android application class – Android Activities: creating activities – activity lifecycle

UNIT III BUILDING USER INTERFACE

Building user interface: fundamental Android UI Design – Android user interface fundamentals – Introducing Layouts: Defining layout – Types of Layout – Introducing fragments: creating New fragments – Fragment life cycle – Introducing fragment manager – Android fragment classes – View: creating a new view – modifying Existing view – custom view.

UNIT IV DATABSES FOR ANDROID

Introducing Adapters – Intents – Linkify – Introduction to Databases and content providers: Introducing Android Databases and content providers: Android Databases – SQLITE – Content values and cursors – working with SQLITE Databases – Querying a databases – Extracting values from a cursor – Adding, updating and Removing rows – creating content providers- Native Android content provider

UNIT V ADVANCED ANDROID DEVELOPMENT

Advanced Android development: Introducing SMS and MMS - Bluetooth communications - Paranoid Android - Introducing cloud to device messaging - introducing In-App Billing - Distributing Applications

Total Periods:45

COURSE OUTCOMES

On completion of this course, the student will be able to:

- Apply foundational mobile application concepts.
- Solve real world hardware and software problems based on Android resources.
- · Examine different User Interface to validate different Ethical and Social responsibilities.
- Analyze the local and global impact of Persistence database mechanism in Android.
- · Execute operations on GUI objects based Applications android techniques, skills and Tools.

Semester	V.
Credit	3
Max.	CIA -30
Marks	CE -70
	TOT =100

9

TEXT BOOKS

1. Reto Meier, Professional Android 4 Application Development, Wiley 2017.

REFERENCE BOOKS

- 1. Charlie Collins, Michael Galpin and Matthias Kappler, Android in Practice, Dream Tech. 2012
- Wei Meng Lee, Beginning Android Application Development, Wiley 2011
 Jeff McWherter and Scott Gowell, Professional Mobile Application Development, Wrox 2012.

Prepared by M.Praneesh

Approved by

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Dr.G.Maria Priscilla