Sri Ramakrishna College of Arts and Science
(Autonomous)

(Formerly S.N.R. Sons College)
(Affiliated to Bharathiar University)
(Re-Accredited with 'A' Grade by NAAC)
(An ISO 9001:2008 Certified Institution)
Nava India, Coimbatore-641 006, Tamil Nadu, India.

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

CBCS & OBE PATTERN

UNDER GRADUATE PROGRAMMES

BCA Degree Course
(For the students admitted during the academic year 2017-2018 and onwards)

Part	Study Components and Course Title	CIA	Comprehensive Exam		Compre-hensive Exam Total	Total	Credit
			Online	Descriptive Theory			
Semester–I							
I	17T01Language-I	30		70	70	100	3
II	17E01English-I	30		70	70	100	3
III	Core I: 17CSC01 Digital Fundamentals and computer organization	30	20	50	70	100	4
III	Core - II : 17ITC01 Programming in C	30	20	50	70	100	4
III	ALLIED I: 17COC01 Business Accounting	30	20	50	70	100	4
III	Practical - I : 17CSC02 Office Automation Lab	30		70	70	100	3
III	Practical – II :17ITC02 Programming in C Lab	30		70	70	100	3
IV	17ES01 Environmental Studies#	100			-	100**	1#
IV	PACE – I : 17CPE01P@	-			100	100**	1@
IV	JOC – I 17CAJC1 $	-					1$
Semester –II							
I	17T02Language-II	30		70	70	100	3
II	17E02English-II	30		70	70	100	3
III	CORE III –17CAC01	30	20	50	70	100	5

	Data Structures						
III	CORE IV –17CACP02 Object Oriented Programming with C++	50		50	50	100	5
III	CORE V – Computer Organization and Architecture	30	20	50	70	100	4
III	ALLIED II – 17CA201 Numerical Methods And Statistics	30	20	50	70	100	4
III	Practical – III : 17CAC04 C++ lab	30		70	70	100	3
III	Practical IV:17CAC03 Data Structure lab using C	30		70	70	100	3
IV	17VE01 – Value Education #	100			-	100**	1#
IV	PACE – II 17CPE02@	-			100	100**	1@
IV	JOC – II17CAJC2$	-					1$
Semester III							
III	Core – VI 17CSC03 Java Programming	30	20	50	70	100	4
III	Practical – V: 17CSC04 Java Programming lab	30		70	70	100	3
III	Practical – VI: 17ITC04 RDBMS Lab	15		35	35	50	2
III	OPEN ELECTIVES –I 17CAI01	30	20	50	70	100	3
III	ALLIED III – 17MATC05- Operations Research	30	20	50	70	100	4
III	Skill based Subject : 1 17ITC03 - RDBMS	30	20	50	70	100	3
IV	17BT01/17AT01 Basic Tamil I / Advanced Tamil I #	100				100**	1$
IV	PACE – III @17CPE03	-			100	100**	1@
IV	JOC – III$ 17CAJC3	-					1$
Semester IV							
III	Core – IX17 ITC06 Software Engineering	30	20	50	70	100	4
III	Practical – VII: 17CA402 VB.NET Lab	15		35	35	50	2
III	Practical – VIII:17CA403 Software Testing Lab	30		70	70	100	3
III	Elective – I - 17CAE01/02/03	30	20	50	70	100	4
III	ALLIED IV17CA404	30	20	50	70	100	4

	Marketing Management						
III	Skill based Subject : 2 17CA401 VB.NET	30	20	50	70	100	3
IV	17BT02/17AT02 Basic Tamil II / Advanced Tamil II #	100				100**	1$
IV	PACE – IV @17CPE04				100	100**	2@
IV	JOC – IV$ 17CAJC4	-					1$
Semester V							
III	Core – XIII17ITC05 Computer Networks	30	20	50	70	100	4
III	Practical – IX: 17CA503 MINI Project	50		50	50	100	3
	Practical - X: 17CA502 Mobile Application Development Lab	15		35	35	50	2
III	Core - XV 17CAP01 C# Programming with Lab	50		50	50	100	5
III	OPEN ELECTIVES –II 17CAI02	30		70	70	100	3
III	Skill based Subject : 3 17CA501 Mobile Application Development	30	20	50	70	100	3
IV	PACE – V @17CPE05				100	100**	2@
IV	JOC – V$ 17CAJC5	-					1$
Semester VI							
III	Core – XVIII17CAC05 Operating System	30	20	50	70	100	3
III	Practical – XI: 17CAC06 Operating System Lab	30		70	70	100	3
III	Practical -XII: 17CSC06 PHP Lab	15		35	35	50	2
III	Core – IX 17CAP02 Python Programming with Lab	50		50	50	100	5
III	17CAE04/05/06 Elective –II	30	20	50	70	100	4
III	Skill based Subject : 4 17CSC05 - PHP	30	20	50	70	100	3
V	17NS01/NC01/SP01/YR01/SI01/RB01/ SB01/YH01 - Extension Activities NSS/NCC/SPORTS/YRC/SIS/YOGA/ Swachh	100			-	100**	1

	Bharat Abhiyan #						

$ Extra credit courses for the candidates who opted other languages in Part – I and JOC

No Comprehensive Examinations. Only Continuous Internal Assessment (CIA)

@ No Continuous Internal Assessment (CIA). Only Comprehensive Examinations.

** Marks will not be included in CGPA calculations.

List of Elective papers (Can choose any one of the paper as electives)		
Elective – I	17CAE01	Mobile Computing
	17CAE02	Big Data Analytics
	17CAE03	Cloud Computing
Elective – II	17CAE04	Network Security
	17CAE05	Data Security
	17CAE06	Information Security

List of Open Elective papers offered by the dept.	
Open Elective – I	Basics of internet
Open Elective – II	Introduction to open source tools

Summary							
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
Part III	Core	22	4/5/3/2	90	18	100	2400
					2	50	
	Allied	4	4		4		
	OPEN ELECTIVES	2	4	8	2	100	200
	Electives	2	4	8	2	100	200
	Skill Based	4	3	12	4	100	400

							3600
Part IV	Lang.	2	1	2$	2	100	200**
	PACE	3	1	3@	5	100	500**
		2	2	4@			
	EVS & VE	2	1	2#	2	100	200**
	JOC	5	1	5$	-	-	-
Part V	@ Extension	1	1	1	1	100	100**
	Total			140			

$ - Extra credit courses

**-NOT INCLUDED IN TOTAL MARKS

Note : Total credits may vary between 140 – 145

Syllabus Coordinator **BOS-Chairman**

17 CSC 01-DIGITAL FUNDAMENTALS AND COMPUTER ORGANIZATION
(Common to Computer Applications, Computer Science and Information Technology)

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

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

UNIT – II LOGIC GATES AND CIRCUITS 11
Adders – Sub tractors – Code Convertor – Multilevel NAND and NOR Circuits – Binary Parallel Adder – Decimal Adder – Decoders – Encoders – Multiplexers – Demultiplexer – Design of Circuits Using Multiplexers / Decoders.

UNIT – III FLIP FLOPS AND REGISTERS 11
Flip Flops – RS, JK, D And T Flip Flops – Excitation Table – Registers – Shift Registers – Counters – Ripple Counters – Synchronous Counters – Design of Counters.

UNIT – IV INPUT – OUTPUT ORGANIZATION 11
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 12
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: 55 Hrs**

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.

Prof.M.PRASANNA KUMAR
(Course coordinator)
Prepared By

Dr.J.MARIA PRISCILLA
(BOS Chairman)
Approved By

17ITC01-PROGRAMMING in C

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

Semester	I
Credit	**4**
Paper Type	**Core**
Max. Marks	**CIA – 30 + CE - 70**

COURSE 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 **11**

Overview 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 **11**

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 **11**

Arrays: Introduction – 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 **11**

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 **11**

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.

Total Periods : 55 Hrs.

COURSE OUTCOME

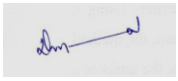
- Explain the basics of programs and programming
- Select appropriate data types and control structures for solving a given problem.
- Illustrate the representation of arrays, strings and usage of string operations.
- Knowledge of pointers and dynamic memory allocation.
- Explain the basics of file handling mechanism.

TEXT BOOK

E. Balagurusamy , " Programming in ANSI C ", 4th Ed., Tata McGraw - Hill Publications ,2017.

REFERENCE BOOKS

1. Yashavant Kanetkar, "Let us C",3rd Ed., BPB Publications, 2013.
2. Gottfried ,"Programming with C", 2nd Ed.,TMH Publications



Dr.C.DEEPA
(Course coordinator)

Dr.N.SUMATHI
(BOS Chairman)

Prepared By

Approved By

17 COC 01- BUSINESS ACCOUNTING

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

COURSE OBJECTIVES

- To familiarize the basic concepts of accounting and its Features
- To develop conceptual understanding of fundamentals of financial accounting, cost accounting and management accounting.

UNIT –I INTRODUCTION TO ACCOUNTING 9

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 8

Preparation of Final Accounts with simple adjustments.

UNIT –III COST ACCOUNTING AND STORES LEDGER 9

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 9

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

UNTI-V BUDGETING AND ITS CLASSIFICATION 9

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

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

T.S. Reddy and A.Murthy -"Advanced Accounting"- -Margham Publications-2016
Jain and Narang -"Cost Accounting"-
R.K.Sharma & Shashi K. Gupta -"Management Accounting"- -Kalyani Publishers,13th edition-2014

REFERENCE BOOKS

S.P-. Jain and K.L Narang "Advanced Accounting"- -kalyani publications-20th Edition-2014
A. Murthy and S. Gurusamy Cost Accounting"-, vijay Nicole-2nd edition-2014
Khan & Jain- "Management Accounting"- Tata McGraw Hill,6th edition -2013

(Dr.V.Nirmala Devi)
Course Coordinator
Prepared By

(Dr.V.Nirmala Devi)
Chairman BOS
Approved By

17CSC02 OFFICE AUTOMATION
(Common to Computer Science / Information Technology / Computer Application)

Semester	I
Credit	3
Paper type	Core
Max. Marks	CIA - 30 + CE - 70 TOT =100

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.

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.

(Case Study on MS Word or MS Excel or MS Power point or MS Access)

Course Outcome:

Total Hours : 4 hrs/week
Total Period : 44 Hours

- To identify various applications in Ms-Word.
- To understand various techniques in Ms-Excel.
- To make presentations using Ms-Power point and presenting in software industries.
- To analyze various ways of handling table, forms and reports using Ms-Access.

Prepared by
PROF.S.GOVINDARAJU

Approved by
Dr.G.MARIA PRISCILLA

17ITC02 - Programming in C Lab

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

Semester	**1**
Credit	**4**
Paper Type	**Core Practical**
Max Marks:	**CIA – 30 + CE - 70**

COURSE 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.Implement various Operators

2. Illustrate the concept to manage various formatted input output operations in C

3.Implement Decision making and Branchingstatements

4. Implement Looping statements

5. Illustrate the concept of Arrays

6.Implement Character arrays and Strings

7.Implement User defined function

8. Implement Structures and Union

9. Implement Pointers

10. Illustrate the concept of files

Total Periods : 33 Hrs.

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.

Dr.C.DEEPA
(Course coordinator)

Dr.N.SUMATHI
(BOS Chairman)

Prepared By

Approved By

17ES01 - ENVIRONMENTAL STUDIES

Semester	I
Credit	1
Paper type	P IV
Max. Marks	CIA - 100 TOT = 100

COURSE OBJECTIVES:

- Outline the concepts of ecosystem and environmental interactions
- To understand the role of various environmental pollutants and its effects.
- To understand the environmental social issues
- Understand the Human Population growth and its variation in the environment

Unit I: **(4)**

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

Unit II : **(4)**

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 : **(4)**

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

Unit IV : **(4)**

Social Issues and the Environment - Urban problems related to energy, Water conservation, rain water harvesting, watershed management, Environmental Issues in Coimbatore District (Noyyal River, Dye Industries and Agricultural issues). 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 : **(4)**

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.

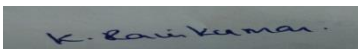
Total Periods : 2/Week
Total Periods: 20 Hrs

COURSE OUTCOME:

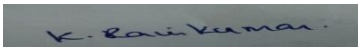
- Understand the ecosystem structure and functions.
- Identify the key concepts in Environmental pollution and population growth
- Able to relate the Socio- Environmental issues.
- Able to understand the human rights, women and child welfare in the environment

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.



Prepared by
DR. K.RAVIKUMAR



Approved by
DR. K.RAVIKUMAR

17CPE01-PERSONALITY, APTITUDE AND CAREER ENHANCEMENT (PACE – I)

Common to all the UG streams admitted from AY 2017-18

AIM:

Identifying individual students levels of communication and employability skills through assessments. Imparting the importance of soft skills and career planning for achieving goals, intra-personal skills through motivation and perception. Developing inter-personal skills, teamwork skills and emotional intelligence. Enhancing English language vocabulary and spoken communication skills.

Semester	I
Credit	1
Paper type	Skill based
Max. Marks	Online test : 50 + Viva-Voce : 50 = 100

Course Objectives

To enable students to,

- To identify individual levels of communication and employability skills through assessments.
- To impart the importance of soft skills and career planning for achieving goals.
- To give an account of the importance of intra-personal skills through motivation and perception.
- To enhance the usage of Grammar units like Nouns, Verbs, Tenses, Simple, Compound and Complex Sentences, Active & Passive Voice, Phrases, Synonyms, Antonyms, and Homonyms.
- To enhance English vocabulary and spoken communication skills.

Unit I Assessment of individual levels of communication skills, aptitude and employability skills; Psychometric test, SWOT analysis; Planning on setting goals.

Unit II Introduction to Career planning; Goal setting – Introduction to Soft Skills - Presentation skills - Intra-personal skills.

Unit III Emotional intelligence - Perception and Motivation.-Interpersonal Skills; Team work, styles in leadership.

Unit IV Enhancement of Basic English vocabulary; Parts of Speech, Nouns, Verbs, Tenses, Simple, Compound and Complex Sentences, Active and Passive Voice, Phrases, Synonyms, Antonyms, and Homonyms Descriptive words - Combining sentences, Sentence Formation and Completion.

Unit V Art of communication – the communication process - Word building and Role play; Exercise on English Language through symposiums and workshops.

Instruction Hours per Week: 40

Course Outcomes

On the successful completion of the PACE – I course the student would be able to…

- Identify their individual level of communication, aptitude and employability skills to understand their competency level.
- Plan their career and set their goals.
- Prove their presentation skills and also intra and interpersonal skills.
- Communicate well with improved sentence making skill and vocabulary.

References:

1) A Modern Approach to Verbal and Nonverbal Reasoning by Dr. R. S. Aggarwal
2) A Modern A Modern Approach to Verbal by Dr. R. S. Aggarwal
3) A Modern Approach to Nonverbal Reasoning by Dr. R. S. Aggarwal
4) A Practical Course in Spoken English by J.K.Gangal
5) Effective English Communication for you by V.Shamala
6) Developing Communication Skills by Krishna Mohan & Meera Banerji
7) English for Competitive Exams by Bhatnagar

Dr.A.ARUNRAJKUMAR
(Course coordinator)
Prepared By

Dr.ANNA SARO VIJENDRAN
(BOS Chairman)
Approved By

Semester	II
Credit	5
Paper Type	CORE
Max. Marks	CIA -30 CE -70

17CAC01 - DATA STRUCTURES

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

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 **11**

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 **11**

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 **11**

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 Doubly Linked lists - Operations on Doubly Linked lists. **Applications**: Addition of Polynomials.

UNIT–IV **11**

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 **11**

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 problem
- Understand and implement fundamental algorithms like sorting and searching in various real time applications.

Total Periods: 55 Hrs

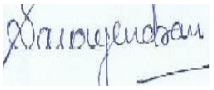
TEXTBOOK

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.

REFERENCE BOOKS

1. Ellis Horowitz &Sartaj Shani "Data And File Structures"- Galgotia Publication 2014.
2. Jean Paul Tremblay, Paul G. Sorenson "An Introduction to Data Structures With Applications"- Second Edition, Tata Mcgraw Hill 1984

Dr.S.THAVAMANI
CORSE CO ORDINATOR



Dr.ANNA SARO VIJENDRAN
BOS CHAIRMAN

Prepared By

Approved By

17CAC02 - OBJECT ORIENTED PROGRAMMING WITH C++

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

Semester	**II**
Credit	**5**
Max. Marks	**CIA -30** **CE -70** **TOT -100**

COURSE OBJECTIVES

- 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 **11**

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 variables–dynamic initialization of variables – Reference variables–Operators – Scope resolution operator – Operator Precedence – Control Structures

UNIT–II **11**

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 class-Static data members – Static member functions - Array of objects – Objects as function arguments – Returning objects- Constant member functions – Friend functions

UNIT–III **11**

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

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

UNIT–IV **11**

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 **11**

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/O operations.

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

Total Periods : 55 Hrs

COURSE OUTCOME

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

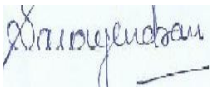
- Understand concepts of objects and their significance in real world.
- Be able to develop, design and implement C++ program using classes, objects and functions.
- Ability to implement constructor, destructor and operator overloading
- Able to demonstrate the use of virtual functions using polymorphism and inheritance.
- Apply the concepts of files and stream classes

TEXT BOOKS

1. 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,2013.



Dr.N.MUTHUMANI
Course Coordinator
Prepared By

Dr.ANNA SARO VIJENDRAN
BOS Chairman
Approved By

17CA201- NUMERICAL METHODS AND STATISTICS

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

COURSE OBJECTIVES

- To enable the students to understand fundamental numerical methods and statistics.

NUMERICAL METHODS

UNIT- I
POLYNOMIAL EQUATIONS **11**

Initial approximations – Bisection, Secant, Newton – Raphson. (No Derivations). – Simple problems

UNIT- II
SYSTEM OF LINEAR ALGEBRAIC EQUATIONS **10**

Gauss Elimination, Gauss Jordan, Gauss Jacobi and Gauss Seidel methods - Inverse of a matrix using Gauss Elimination method (No Derivations). - Simple problems

UNIT- III
INTERPOLATION, NUMERICAL DIFFERENTIATION AND INTEGRATION **13**

Interpolation : Newton's forward and backward interpolation.
Numerical differentiation : Newton's forward and backward differentiation.
Numerical Integration : Trapezoidal rule – Simpson's ($1/3^{rd}$)
(No Derivations). - Simple problems

STATISTICS

UNIT - IV
MEASURES OF CENTRAL TENDENCY AND DISPERSION **11**

Arithmetic Mean, Median, Mode,
Range, Standard Deviation, Variance and co-efficient of variation. - Simple problems

UNIT- V

CORRELATION AND REGRESSION **10**

Meaning – Types - Scatter diagram – Karl Pearson's Co-efficient of Correlation – Rank Correlation (Two Variables only). Regression Analysis : Meaning –Simple Regression equations (Two variables only) - Simple problems

****The Paper should have theory not more than 20% and the remaining 80% Problems**

COURSE OUTCOME

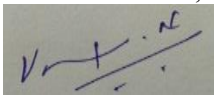
After the completion of the course the students will be able to

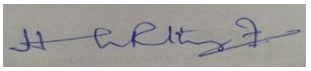
- solve the numerical method problems.
- solve problems on central tendency, dispersion, correlation and regression
- understand the concepts of probability and probability distribution.

Total Periods:55 Hrs

TEXT BOOKS

1. Dr. M. K. Venkataraman "Numerical methods in Science and Engineering" National Publishing Company 1st edition – **Unit (I, II, III)**
2. Navnitham Pa , "Business Mathematics and Statistics " S.Chand & Co. Ltd. 1st edition (**Unit IV& V**)





Dr.N.UMA
(Course coordinator)
Prepared By

Dr.F.HANNAH REVATHY
(BOS Chairman)
Approved By

17CAC04 - C++ LAB

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

COURSE OBJECTIVES

- 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++ Programs to illustrate the concept Arrays
2. Write C++ Programs to illustrate the concept Inline Functions
3. Write C++ Programs to illustrate the concept Objects and Classes
4. Write C++ Programs to illustrate the concept Array of objects.
5. Write C++ Programs to illustrate the concept Constructors and Destructors
6. Write C++ Programs to illustrate the concept Overloading unary operators
7. Write C++ Programs to illustrate the concept Overloading binary operators
8. Write C++ Programs to illustrate the concept Overloading operators using friend function
9. Write C++ Programs to illustrate the concept Multilevel Inheritance
10. Write C++ Programs to illustrate the concept Multiple Inheritance
11. Write C++ Programs to illustrate the concept Virtual Functions
12. Write C++ Programs 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: 33 Hours

Dr.N.Muthumani
(COURSE COORDINATOR)

Dr.Anna Saro Vijendran
BOS CHAIRMAN

17CAC03-DATA STRUCTURES LAB USING C
(Common to Computer Applications, Computer Science and Information Technology)

Semester	**II**
Credit	**3**
Paper Type	**Core Practical**
Max. Marks	**CIA -30** **CE -70**

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: 33 Hrs

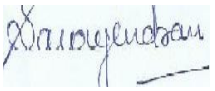
COURSE OUTCOME

- 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.

Dr.S.Thavamani

COURSE COORDINATOR

Prepared By



Dr.Anna Saro Vijendran

BOS CHAIRMAN

Approved By

17VE01 - VALUE EDUCATION
(Common to all UG courses)

Semester	II
Credit	1
Max. Marks	CIA -100 CE - Nil TOT =100

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 4

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

UNIT – II SOCIETY & FAMILY VALUES 4

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

UNIT - III ETHICS & LEADERSHIP QUALITIES 4

Ethical values: Ethics, Social Ethics, Public Policy - Leadership qualities: Integrity, Character, Courage - Personality development.

UNIT - IV SOCIAL VALUES 4

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

UNIT - V SOCIAL PROBLEMS AND ROLE OF STUDENTS 4

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 **Total Periods : 20**

- 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.

Verified by : Dr.R.Thirumoorthi

Signed by : Dr.R.Thirumoorthi

17CPE02 - PERSONALITY, APTITUDE AND CAREER ENHANCEMENT

PACE – II

Instruction Hours per Week: 3

Semester	II
Credit	1
Max. Marks	100

Course Objectives

To enable students to,

- Revise the Fundamentals of English Grammar
- Identify the importance of communication skills and professional grooming.
- Equipped with the techniques of Group Discussion
- Enhanced with techniques such as public speaking, debate, extempore and quiz etc.

Unit I

English language enhancement- Business Idioms- Indianisms in English- Common Errors in Pronunciation - Signposts in English- Verbal ability-Articles-Parts of speech-Phrases, clauses and modifiers - errors in tenses – prepositional errors – parallelism errors – mood, conditionals and multiple usages.

Unit II

English listening- hearing Vs. listening - Nonverbal communication – Appearance, dressing and grooming - Tips to maintain good impression at work - business etiquette – basic postures and gestures and table manners, Body language - dealing with people communication - media etiquette - telephone etiquette, email etiquette.

Unit III

Group discussion, interviews and presentation skills - Group behaviour – Team Work – Team building – Open and Closed group discussions.

Unit IV

Public speaking skills – Social Phobia – Eliminating Fear - Organizing speech and effective delivery – Common etiquette of Public speaking - opening and closing of speech, audience management and styles.

Unit V

Exercises on Resume writing - Public speaking, Group discussion, debate, extempore, quiz and contemporary group play and role play.

Total Periods: 45

Course Outcomes

On the successful completion of the above course the student would be able to…

- Identify Fundamental of English grammar and Common errors of Pronunciation and Parts of speech.
- Equipped with the Art of Communication both verbally and non-verbally with business etiquette.
- Present in GD, Interview along with the ability of effective team work and group behavior.
- Present public speaking without fear and with fundamental social etiquettes.
- Equipped in the various exercises like GD, Debate, Extempore and so on.

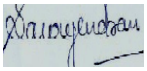
References:

1) A Modern Approach to Verbal and Nonverbal Reasoning by Dr. R. S. Aggarwal
2) A Modern A Modern Approach to Verbal by Dr. R. S. Aggarwal
3) A Modern Approach to Nonverbal Reasoning by Dr. R. S. Aggarwal
4) A Practical Course in Spoken English by J.K.Gangal
5) Effective English Communication for you by V.Shamala
6) Developing Communication Skills by Krishna Mohan & Meera Banerji
7) English for Competitive Exams by Bhatnagar

Dr.A.ARUNRAJKUMAR

(Course coordinator)

Prepared By



Dr.ANNA SARO VIJENDRAN

(BOS Chairman)

Approved By

Semester	III
Credit	3
Paper Type	Core X Practical-5
Max. Marks	CIA:30 + CE :70

17CSC04 - 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 a Java programs to solve a well specified problem.
- understand a Java program written by someone else,
- be able to debug and test Java 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
4. 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 an applet program to create a registration form of student.

Course Outcome **Total Hours:45**

- 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

Verified by
(Mrs. A.Jeyalakshmi)

Approved by
(Dr. G.Maria Priscilla)

Semester	III
Credit	3
Paper Type	Core X Practical-5
Max. Marks	CIA:30 + CE :70

17CSC04 - 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 a Java programs to solve a well specified problem.
- understand a Java program written by someone else,
- be able to debug and test Java programs;

1. Write a program to find the greatest of three numbers.
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10. Write an applet program to create a registration form of student.

Course Outcome **Total Hours:45**

- 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

Verified by
(Mrs. A.Jeyalakshmi)

Approved by
(Dr. G.Maria Priscilla)

17ITC04- RDBMS LAB

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

Semester	III
Credit	2
Paper Type	Core Practical
Max. Marks	CIA -15 CE -35

COURSE OBJECTIVES

- To give a good formal foundation on the relational model of data
- 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 the ORDER_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.

Total Periods: 33

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

Approved by:
Dr.N.SUMATHI

OPEN ELECTIVES –I
17CAI01- BASICS OF INTERNET

Semester	**III**
Credit	**3**
Paper Type	**Open Elective- I**
Max. Marks	**CIA – 30+** **CE - 70**

AIM:

This subject will allow the students to become familiar with Internet and web design.

COURSE OBJECTIVES:

- Be able to find and evaluate information on the Web
- Be able to learn the basics of e-mail, such as sending, forwarding & receiving mail, attaching documents, creating mailboxes, filters, and address books.
- Be able to know the terms HTML, HTTP, URL.
- Be able to understand the basics of PHP
- To perform e-payments

UNIT- I **11**

Introduction to Computers - Programming Language types - History of Internet Personal Computers - History of World Wide Web - Web resources.

Web Browsers- Internet Explorer- connecting to Internet Features of Internet explorer6 Searching the Internet- Online help and tutorials- File Transmission Protocol (FTP) Browser Settings.

UNIT – II **11**

Understanding websites and web servers: Understanding Internet – Difference between websites and web server- Internet technologies Overview –Understanding the difference between internet and intranet.

Attaching a file - Electronic mail - Creating an E-mail id - Sending and Receiving mails-attaching a file – Instance messaging.

UNIT – III **11**

Introduction to HTML headers - Linking- Images-special characters and line breaks-unordered lists- Simple HTML Programs. HTML Tables – Tables and Formatting – Forms – Complex Forms – Internal Linking- Creating and Using Image Maps – Meta Elements – Frame Set – Nested Frame Set.

UNIT – IV **11**

Cascading Style Sheets : Inline Style – Embedded Style Sheets – Conflicting Style Sheets - W3C CSS Validation Service – Positioning Elements – Backgrounds – Element Dimensions – Text flow and Box Model – User Style Sheets.

UNIT - V **11**

E-marketing consumer tracking Electronic advertising search engine-Paytm- credit card Payments- Digital cash – e wallets – smart card.

Total Periods: 55 Hrs

COURSE OUTCOME:

- Define the World Wide Web.
- Understand E-mail
- Outline the concepts of HTML
- Understand the PHP programming
- Implement the E-payment System.

TEXT BOOKS:

1. "Internet and World Wide Web", Third edition H.M.Deital, P.J. Deital and A.B.Goldberg-PHI.
2. Deitel and Deitel and Nieto, "Internet and World Wide Web - How to Program", Prentice Hall, 5th Edition, 2011.

REFERENCE BOOK:

1. The Internet- Complete Reference Harley Hahn, Tata McGraw hill.

Prof. V.SUMATHI
Course coordinator
Prepared By

BOS Chairman
Approved By

17MATC05- OPERATIONS RESEARCH
(Common to Computer Applications, Computer Science and Information Technology)

Semester	**III**
Credit	**4**
Paper Type	**Allied - III**
Max. Marks	**CIA – 30+** **CE - 70**

COURSE OBJECTIVES

- 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 Method of $\leq$ 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

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

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

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

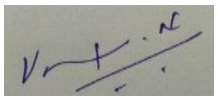
TEXT BOOK

Operations Research – KantiSwarup, P.K.GuptaandManmohan

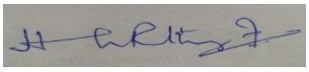
REFERENCE BOOKS

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.

Total Periods : 55 Hrs.



Dr.N.UMA
(Course coordinator)
Prepared By



Dr.F.HANNAH REVATHY
(BOS Chairman)
Approved By

17ITC03 -RDBMS

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

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 **9**

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

UNIT–II **9**

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 **9**

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

UNIT–IV **9**

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

UNIT–V **9**

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: 45

Course Outcome

- 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
- To describe the fundamentals of web and its applications

Textbook

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

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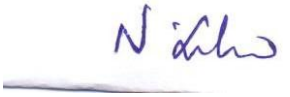
Reference Books

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

Prepared By,

(S.B.Mahalakshmi)



Approved By,

(Dr.N.Sumathi)

PERSONALITY, APTITUDE AND CAREER ENHANCEMENT (PACE – III)
Subject Code: 17CPE03
Common to all the UG streams admitted from AY 2017-18

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.

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

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 introduce and inculcate higher level of Emotional Intelligence to help them cope with their life ahead, 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.
- 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

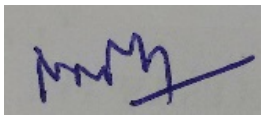
Course Outcomes

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

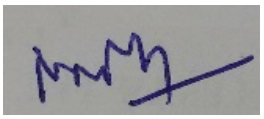
- Solve questions on basic Quants, Verbal and Reasoning Ability
- Inter-relate all the linguistic concepts learnt and apply them while solving questions on Verbal Ability
- Develop the habit of Reading
- Understand the relevance and application of Emotional Intelligence in the Recruitment Process
- Answer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



Mr. T.Nagaprakash
(Course coordinator)
Prepared By



Mr. T.Nagaprakash
(BOS Chairman)
Approved By

17ITC06 - SOFTWARE ENGINEERING

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

Semester	**IV**
Credit	**4**
Paper Type	**Core IX**
Max. Marks	**CIA – 30+ CE - 70 TOT =100**

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 11

INTRODUCTION

A Generic 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.

UNIT–II 11

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.

UNIT–III ` 1 1

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.

AGILE METHODOLOGY

Agile Development –Classification of Methods –The Agile Manifesto & Principles-Agile Project Management-Embrace Communication and Feedback-Programming as if People Mattered-Simple Practices and Tools-Empirical Vs Defined & Prospective Process –Principle Based versus Rule Based –Sustainable Discipline: Human Touch-Team As a Complex Adaptive System- Agile Hype –Specific Agile Methods.

UNIT–IV 1 1

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.

UNIT–V 11

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

Total Periods: 55 Hrs

COURSE OUTCOMES

Upon the successful completion of the course the student should be able to:

- An ability to apply knowledge of science, and engineering models.
- To perform the requirement analysis to build a software components.
- An ability to design and conduct experiments, as well as to analyze and interpret data
- An ability to test the software modules using the testing techniques.
- To understand software quality standards and assurance.

TEXT BOOKS:

1. Roger Pressman.S., Software Engineering:A Practitioner's Approach, 6th Edition, McGraw – Hill ,2005.
   UNIT I – Chapter 1, 2, 3 UNIT II – Chapter 4,5, 6, 7 UNIT III – Chapter 9, 10 UNIT IV – Chapter 12,13, 14 UNIT V – Chapter 26, 27, 31
2. Craig Larman "Agile and Iterative Development – A Manager's Guide", Pearson Education ,2004.
   UNIT III – chapter 3

REFERENCEBOOKS:

1. Sommerville, Software Engineering, Eighth Edition: Addison Wesley, 2007.
2. Carl Dichter, Mark Pease, Software Engineering with Perl, Prentice Hall, 2007.
3. James F Peters, WitoldPedryez, Software Engineering-An Engineering Approach, John WitoldPedrycz, 2004.
4. P. Fleeger, Software Engineering, Third Edition, Prentice Hall, 1999.
5. Carlo Ghezzi, Mehdi Jazayari, Dino Mandrioli,Fundamentals of Software Engineering, Prentice Hall of India, 1991.
6. Elisabeth Hendrickson, "Agile Testing" Quality Tree Software Inc, 2008.
7. Alistair "Agile Software Development series" Cockburn , 2001.

Prepared by

(S.Prahadeeshwaran)

Approved by

(Dr.N.Sumathi)

17CA402 – VB.NET LAB

Semester	**IV**
Credit	**2**
Paper Type	**Practical – VII**
Max. Marks	**CIA -15 + CE - 35**

COURSE OBJECTIVES

- To inculcate knowledge on Object-Oriented programming concepts using VB.Net
- To describe the basic structure of a Visual Basic.NET project and use main features of the integrated development environment (IDE)
- To create applications that use ADO. NET
- Using Crystal Reports

1. Develop a Windows application to sort the given numbers using looping statements.
2. Develop a Windows application to print grade of a student using Conditional Statement.
3. Develop a Windows application to add and remove items in a list view control.
4. Develop a Windows application to create a menu for performing cut, copy and paste.
5. Develop a Windows application for calculating the total marks of a student using User control.
6. Develop a Console application for String Manipulation.
7. Develop an application to design a Calculator.
8. Develop an application to display employee details using ADO.Net.
9. Develop an application to display Stock details using ADO.Net.
10. Develop an application for Bank details and generate a Crystal Reports.

Total Periods: 30 Hrs

COURSE OUTCOME

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

- Understand and analyze the VB.NET IDE Framework.
- Be able to develop, design and implement VB.Net program using various controls.
- Ability to implement ADO.Net connectivity.
- Able to demonstrate the Crystal Reports.

Prof.V.SUMATHI
(Course coordinator)
Prepared By

Dr. D.Hariprasad
(BOS Chairman)
Approved By

17CA403 – SOFTWARE TESTING LAB

Semester	**IV**
Credit	**3**
Paper Type	**Practical – VIII**
Max. Marks	**CIA -30 + CE -70**

COURSE OBJECTIVES

- To understand the importance of the testing
- To understand the essential characteristics of tool methods used for test automation
- To describe strategies for generating system test cases
- To implement testing using Win Runner
- To understand s/w test automation problems & solutions

1. To test an application with keyboard and mouse.
2. To check the airline reservation module using win runner.
3. To check the bitmap checkpoint for object window and screen and GUI checkpoint for multiple object window using win runner.
4. To check the data driven wizard using win runner.
5. To check the synchronization points for object bitmap window using win runner.
6. To check the database checkpoint using win runner.
7. To check the MS Paint application using win runner.
8. To check the bitmap regression using win runner.
9. To check the insert and delete functions using win runner.
10. To check the output for the program of calculator using VB and test in win runner.

Total Periods: 44 Hrs

COURSE OUTCOME

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

- Understand the importance of software testing and apply software testing techniques for information systems development
- Apply s/w testing techniques in commercial environments and assess the adequacy of test suites using control flow, data flow and program mutation.
- Create test strategies and plans, design test cases, prioritize and execute them.

Mrs. V.Sumathi
(Course coordinator)
Prepared By

Dr.D.Hariprasad
(BOS Chairman)
Approved By

ELECTIVE I

17CAE01- MOBILE COMPUTING

Semester	VI
Credit	4
Paper type	Elective I
Maximum Marks	CIA 30, CE 70
	TOTAL 100

AIM

To enable the students to learn the concept of mobile computing.

COURSE OBJECTIVES

- To know about the intricacies of Mobile Computing
- To learn about widely used Wireless Networks
- To study about the Security issues of Mobile Computing
- To explore various Mobile Operating Systems

PREREQUISITE

- This course requires students have a general understanding of internet.
- Students should also be able to understand some basic concepts of network security, wireless networks and mobile handheld devices.

UNIT – I INTRODUCTION TO MOBILITY 11

Mobile computing – Mobile Agents – Technical Issues for Mobility – Personal Communication Systems - **Wireless Cellular Communication –** Electro Magnetic Spectrum - Communication Satellites - **Multiple access schemes**: FDMA – TDMA – CDMA.

UNIT – II CELLULAR COMMUNICATION 11

2G – 3G – 3.5G – 4G - **Wireless Networks:** N**eed** for new wireless standards - **Bluetooth:** Advantages – Bluetooth applications – Bluetooth protocol stack – Bluetooth tracking services – Bluetooth frame structure – HiperLAN – Comparison of Wireless standards.

UNIT – III PHYSICAL MOBILITY 11

The requirements for Physical mobility – Wireless communication – Mobility – Portability - **Overview of IPV4 and IPV6** – IPV4 – IPV6 - **Mobile IP** – Goals of Mobile IP – Applicability – Mobility support in IPV4 - Mobility support in IPV6.

UNIT – IV THE MOBILE INTERNET AND WIRELESS WEB 11

The WEB Programming Model – The WAP Programming Model – WAP Protocol stack – WAP Gateway – Push operation – Push Message Format – Pull operation – **Security Issues in Mobile Computing –** Security threats to wireless networks – Bluetooth Security – WAP 2.0 Security.

UNIT – V MOBILE HANDHELD DEVICES 11

Characteristics of PDAs – Palm handhelds - The PalmOS Operating System – The Windows Mobile Operating System – Nokia handhelds – Specification – Features –Mobile agents - characteristics.

COURSE OUTCOMES TOTAL PERIODS : 55

On Completion of the course, the students should be able to:

- articulate the concept of wireless communication.
- have knowledge on the Wireless Network architecture.
- choose the appropriate access scheme for a given scenario.
- deploy various Mobile Handheld devices.
- understand various security issues in Mobile Computing.

TEXT BOOKS

1. Kumkum Garg, Mobile Computing Theory and Practice, Pearson Education India, 2007.

REFERENCE BOOKS

1. Dr.N.N.Janani, Kamaljit I. Lakhtaria, Dr.Ashish N.Jani, Neeta Kanabar, Mobile Computing – Technologies and Apllications, S.Chand & Company Limited, 2009.
2. Jochen Schiller Mobile Communications PHI/Pearson Education, 2nd Edition , 2003.
3. Raj Kamal, Mobile Computing, OUP India publications, 2007.
4. Ian Poole, Cellular Communications Explained From Basics to 3G, Elsevier Ltd, 2006.
5. Mischa Schwartz, Mobile Wireless Communications, Cambridge University Press 2005.

Ms.Kanimozhi .V.A
COURSE CO-ORDINATOR

Prepared By

Dr.D.HARI PRASAD
BOS CHAIRMAN

Approved By

ELECTIVE – I
17CAE02- BIG DATA ANALYTICS

Semester	V
Credit	4
Paper Type	Elective - I
Max. Marks	CIA:30 + CE :70

AIM : To enable the students to learn the fundamental concepts of data science and big data analytic methods and tools.

COURSE OBJECTIVES

- Understand the fundamental concepts of Big Data Analytics.
- Inculcate the knowledge about the Phases of Data Analytics Lifecycle.
- Acquire and Apply the Review of Basic Data Analytics Method by Using R Language.
- To explore Advanced Analytical Theory & Methods, Methods of Clustering.

PREREQUISITE

- To have the knowledge in SQL and quantitative background with a solid understanding of basic statistics.
- Experience with any one of the scripting languages like as R-Programming, Java…

Unit –I - INTRODUCTION TO BIG DATA ANALYTICS 11

Introduction to Big Data Analytics: Big Data Overview-Data Structures- Analyst Perspective on Data Repositories - State of the Practice in Analytics-Business Intelligence versus Data Science-Current Analytical Architecture- Drivers of Big Data – Emerging Big Data Ecosystem and a New Approach to Analytics – Key Roles for the New Big Data Ecosystem – Examples of Big Data Analytics.

Unit –II: DATA ANALYTICS LIFECYCLE OVERVIEW 11

Data Analytics Lifecycle Overview-Key Roles for a Successful Analytics Project -Background and Overview of Data Analytics Lifecycle – Phase 1: Discovery - Phase 2: Data Preparation - Phase 3: Model Planning - Phase 4: Model Building - Phase 5: Communicate Results -Phase 6: Operationalize – Case Study: Global Innovation Network and Analysis (GINA).

Unit –III – REVIEW OF BASIC DATA ANALYTICS METHOD USING R 11

Review Of Basic data analytics methods using R: Introduction to R -R Graphical User Interfaces-Data Import and Export- Attribute and Data Types-Descriptive Statistics-Exploratory Data Analysis -Visualization Before Analysis-Dirty Data-Visualizing a Single Variable-Examining Multiple Variables- Data Exploration versus Presentation

Unit–IV: ADVANCED ANALYTICAL THEORY and METHODS OF CLUSTERING. 11

Advanced Analytical Theory and Methods Clustering: Overview of Clustering – K-means – Use Cases – Overview of the Method - Determining the Number of Clusters – Using R to Perform a K-Means Analysis – Diagnostics – Reasons to choose and cautions - Additional Algorithms.

Unit-V : ADVANCED ANALYTICAL THEORY & METHODS 11

Association Rules : Overview - Apriori Algorithm - Evaluation of Candidate Rules - Applications of Association Rules - Validation and Testing. **Classifications:** Introduction to Classification Methods – Decision Trees: Overview of Decision Trees.

Total Periods: 55

COURSE OUTCOMES: On Completion of the course, the students will be able to

- Understand the fundamental concepts, approaches to Analytics and key roles of Data Scientists.
- Acquire the Phases of Data Analytics Lifecycle and apply the data analytics projects in CASE STUDY.
- Participate and contribute as a Data Science Team Member on big data and other analytics projects by using R-Programming Language.
- Understand and Deploying the advanced analytical theory and Methods of Clustering to address big data analytics projects.
- Apply the association rules, validate and testing by the appropriate analytic techniques and tools to analyze big data.

TEXT BOOK:

EMC^2 Education Services, "Data Science Big Data Analytics- Discovering, Analyzing, Visualizing and Presenting Data" Wiley Publishing, Inc., 2015.

UNIT I – Chapter 1 (1.1, 1.2, 1.3, 1.4)
UNIT II – Chapter 2 (2.1,2,2, 2.3, 2.4, 2.5, 2,6, 2.7, 2.8)
UNIT III – Chapter 3 (3.1, 3.2)
UNIT IV – Chapter 4 (4.1, 4.2, 4.3))
UNIT V – Chapter 5 (5.1 - 5.4, 5.6) Chapter 7 (7.1.1)

REFERRENCES:

1. Michael Berthold, David J. Hand, "Intelligent Data Analysis", Springer, 2007.
2. Tom White " Hadoop: The Definitive Guide" Third Edition, O'reilly Media, 2012.

Dr.S.THAVAMANI
COURSE CO-ORDINATOR
Prepared By

Dr.D.HARI PRASAD
BOS CHAIRMAN
Approved By

Semester	IV
Credit	4
Paper Type	Core / Allied / Skill based / Open Elective
Max. Marks	CIA:30 + CE :70

ELECTIVE I

17CAE03 - CLOUD COMPUTING

COURSE OBJECTIVES

- Enable the students to understand basics of cloud computing.
- To understand Large data processing in the cloud
- To understand resource management in cloud
- To implement Virtualization
- To learn how to use Cloud Services

UNIT–I

Introduction: Cloud Computing Basics: Cloud Computing Overview - Applications of cloud computing - Intranets and the cloud – First movers in the cloud - Benefits - limitations of cloud computing – Security Concerns

UNIT–II

Cloud Computing with the titans– the business case for going to cloud.Cloud Computing Technology: Hardware and Infrastructure – Clients – Security – Network – Services – Accessing the cloud**.**

UNIT III

Cloud Storage – Overview-cloud storage providers -standards Cloud Models Cloud Computing at work: Software as a Service – Software Plus Services – Developing Applications

UNIT–IV

Local cloud and thin clients-Cloud virtualization technology-definition-benefits-server virtualization-architecture-hypervisor management software-LPAR-VIO server- Infrastructure requirements**.**

UNIT–V

Cloud Virtualization-Migrating into cloud-Cloud and SOA-future of cloud computing

COURSE OUTCOMES

- Understand the basic concepts of cloud computing and services**.**
- Apply Virtualization concept.
- Assess cloud Storage systems and Cloud security, the risks involved, and its impact.

Total Periods: 55

TEXTBOOKS

1. Anthony T. Velte, Toby J. Velte, Robert Elsenpeter, " Cloud Computing: A Practical Approach", McGraw Hill 2014
2. Dr.Kumar Saurabhu "Cloud Computing- Insights into new era infrastructure",Wiley India 2015

REFERENCEBOOKS

1 Kris Jamsa, " Cloud Computing" Jones and Barlett Student Edition 2014.
2. RajkumarByya, James Broberg, AndrzejGoscinski, " Cloud Computing Principles and Paradigms", Wiley & sons 2016.

Course Coordinator
Prepared By

BOS Chairman
Approved By

17CA404-MARKETING MANAGEMENT

Credit	**4**
Paper Type	**Allied**
Max. Marks	**CIA – 30+ CE - 70**

COURSE OBJECTIVES

This course will help to develop a better appreciation and understanding of the role of marketing in a business organization specifically, and in our society at large.

UNIT -I INTRODUCTION

12

Marketing, Definition, Importance, Evolution of Marketing , Marketing Functions –Functions of Exchange, Function of Physical Distribution , Facilitating ,Functions. Modern Marketing Concept.

UNIT – II MARKETING ENVIRONMENT

12

Marketing Environment – Controllable and Un-Controllable Factors , Demographic, Competitive Economic ,Political, Legal , Social ,Cultural Technological Environment.

UNIT – III MARKET SEGMENTATION & PRODUCT LIFE CYCLE 12

Market Segmentation- Criteria for Segmentation, Benefits, Methods of Segmentation, Marketing Mix – Elements of marketing Mix. Product –Product Mix – Product Life Cycle - Stages of PLC.

UNIT – IV PRICING

12

Pricing – Importance of Price – Pricing Objectives, Factors affecting Pricing decisions – Procedure for Price Determination Kinds of Pricing.

UNIT – V PROMOTION 12

Promotional Activities – The need for Promotional Activities – Importance of Promotion - Objectives of Promotional Activities - Promotion Mix. Channels of Distribution – Definition – Importance – Types of Channels of Distribution.

COURSE OUTCOME

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

- Recognize the importance of marketing in an organization, how marketing relates to other business functions, and the role of marketing in society at large.
- Do basic secondary research relative to marketing in an organization (e.g., by using Internet search engines, such as Yahoo, Google, etc.)
- Select, analyze and define a target market for a selected product or service.
- Develop a marketing plan or strategy for a product or service (e.g., company objectives, marketing objectives, target market(s), advertising, pricing, distribution, product/ service development, evaluation of competitors, contingency plans, budget, etc.)
- Evaluate/analyze the marketing strategy for an existing product and/or services. Know the basic marketing concepts and theories.

Total Periods: 60Hrs.

Text Book

1. R.S.N. Pillai & Bagavathi "Modern Marketing Principles and Practices" -S.Chand and Company, 4th Edition,2017.

Reference Books

1. "Marketing Management "-Philip Kotler , Pearson Prentice Hall ,3th Edition-2016.
2. "Marketing Management"- Gupta C.B. & Nair Rajan , Sultan chand & Sons , 17th Revised Edition, 2016.

Verified by
Dr.S.NIRMALADEVI
Course Coordinator

Approved by
Dr.S.NIRMALADEVI
Chairman BOS

17CA401 - VB.NET

Semester	**IV**
Credit	**3**
Paper Type	**Skill based**
Max. Marks	**CIA – 30+ CE - 70**

AIM:

VB .Net aims to reduce the cost of software development by creating re-useable code that can be used by all applications in the environment, regardless of operating system or programming language.

COURSE OBJECTIVES

- To get the detailed knowledge of .NET and importance of .NET in computer programs.
- Distinguish the key difference between various Controls.
- To implement object-oriented programming concepts along with VB.NET syntax
- To understand data access with ADO.Net

UNIT – I 11

Introduction .NET-VB.NET Framework overview-Common type system- Common language specification-Common immediate language- Just in Time Compiler-Virtual Execution System-.NET Framework-Class Library-Namespace-Languages in .NET-Why VB.NET? – Features – Objects – Encapsulation, Overloading, Inheritance, Polymorphism, Constructors and Destructors, Interfaces, Free threading, delegates- Console applications - Assemblies- Our first VB.NET Program.

UNIT – II 11

Data Types and Operators- Literals, Variables, Data types- Declaration of variables- Constants – Statements-Operators- Keywords- Comments – Scope of Variables- Console application in VB.NET- Control Statements – If Statement- Types of If Statements- Looping Statements.

UNIT – III 11

Form Control- Events- Label- Text Box- Group Box Control- Check Box Control- Radio Button- Visual Basic code for Radio button and Text box Control- Scroll bar Control- C Type- Track Bar- Timer- Picture Box- Working with Mouse Input- Link Label- Date Time Picker- Month Calendar- Arrays- One dimensional array- Array Initialization- Reading Statements- Multidimensional array- Implementation of 2D arrays- Arrays of Array.

UNIT – IV 11

Data access with ADO.Net- What is Database- What is Relational Database- Special features of ADO.Net-Difference between ADO and ADO.Net- Connection- Commands- Dataset using a data grid- Using data adapter configuration wizard- Complex data binding- ADO.Net and Data Binding- Creating a user control in VB.Net-Adding user control to a form- Making Reports in VB.Net.

UNIT – V 11

Procedures and Structures- Functions- Calling a function- Call by reference- Functions with arrays- Function with param arrays-Function Overloading- Sub procedure- Message Box function- Input Box function- Creating Menus and Using dialog boxes- MDI forms- Content menu- Rich Text Box- Color Dialog Control- Font dialog Control-Object Oriented Concepts in VB.NET- Class- Adding methods to classes- Classes with Constructor- Inheritance-Overriding Properties and methods- Polymorphism- Exception- Try, Catch, finally, End Try, Try-Catch, Multiple Catch, Nested Try statements, Try-finally

COURSE OUTCOME

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

- Describe the basic structure of a Visual Basic.NET and use main features of the integrated development environment (IDE)
- Integrate variables and constants into calculations applying VB.NET
- Determine logical alternatives with VB.NET decision structures
- Implement lists and loops with VB.NET controls and iteration
- Separate operations into appropriate VB.NET procedures and functions
- Create applications that use ADO. NET

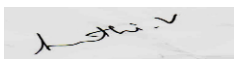
Total Periods : 55 Hours

TEXT BOOK:

1.VB.NET – P.Radnaganesan,Scitech publications India Pvt Ltd, 2008

REFERENCE BOOKS:

1 Alex Homer ,"VB.Net programming " , WROX Publications.
2. Matt J. Crouch, "ASP .Net and VB .Net Web Programming", Pearson Education



Prof.V.SUMATHI
(Course coordinator)

Prepared By

Dr.D.Hariprasad
(BOS Chairman)

Approved By

PERSONALITY, APTITUDE AND CAREER ENHANCEMENT (PACE – IV)
Subject Code: 17CPE04
Common to all the UG streams admitted from AY 2017-18

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

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 andSolutions– 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 II

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

Unit – 5: Interview Skills II

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

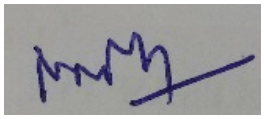
Course Outcomes

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

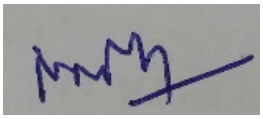
- Solve questions on Quants, Verbal and Reasoning Ability on concepts that are pre-requisites in the current Placement Scenario
- Solve questions on Critical Reasoning
- Participate effectively in Group Discussions without any inhibitions
- Finalise their Resumes and answer higher level questions in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



Mr. T.Nagaprakash
(Course coordinator)
Prepared By



Mr. T.Nagaprakash
(BOS Chairman)
Approved By