



VELS

INSTITUTE OF SCIENCE, TECHNOLOGY
& ADVANCED STUDIES (VISTAS)



(DEEMED TO BE UNIVERSITY Estd. u/s 3 OF THE UGC ACT, 1956)

NAAC ACCREDITED

PALLAVARAM - CHENNAI - INDIA

Department of Computer Science School of Computing Sciences

B.Sc Computer Science

Program Outcomes:

PO-1: To attain knowledge and understanding the principles of programming for applying in broad range of languages and open source platforms.

PO-2: To improve the ability of imparting knowledge in various domains and to solve real world problems with modern technological tools.

Typical Program Specific Outcome (PSO):

Students will be able to:

PSO-1: Understand the programming concepts and methodology & the functionality of hardware and software aspects of computer systems.

PSO-2: Provide effective and efficient real time solutions using acquired knowledge in various domains such as C, C++, JAVA, Web designing, etc.

PSO-3: Provide a technical training, through a range of educational activities, to develop a range of transferable skills applicable to employment.

PSO-4: Emerge as Network Administrator / Manager.

PSO-5: Function as Data Base Administrator.

School of Computing Sciences

B.Sc Computer Science

Board of Studies Members

Sl.No	Name & Address	Designation
1.	Dr.P.Swaminathan , Dean, School of Computing Sciences, Vels University, Chennai.	Chairman
2.	Dr.P.Mayilvahanan , Professor, Department of Computer Applications, School of Computing Sciences, Vels University, Chennai.	Internal Board Member
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8.	Dr.JothiVenkateswaran , HOD, Department of Computer Science, Presidency College, Chennai.	Special Invitees
9.	Mr.R.Balamurugan , SCOPUS Ltd, Chennai.	Alumni Member



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NAAC ACCREDITED

PALLAVARAM - CHENNAI - INDIA

B.Sc Computer Science

Curriculum and Syllabus
(Based on Choice Based Credit System)
Effective from the Academic year
2015-2016

Department of Computer Science
School of Computing Sciences

B.Sc. COMPUTER SCIENCE CURRICULUM

Total number of Credits: 140

Category	Code No.	Course	Hours/Week			Credits
			Lecture	Tutorial	Practical	
SEMESTER I						
Core	15BCS001	Problem Solving Techniques	5	1	0	4
Core	15BCS002	Problem Solving Techniques Lab	0	0	3	2
Core	15BCS003	Digital Logic Fundamentals	5	1	0	4
Core	15BMA001	Mathematics-I	5	0	0	4
AECC	15-----	Language-I	5	0	0	4
AECC	15LEN001	English-I	5	0	0	4
TOTAL			25	2	3	22

Category	Code No.	Course	Hours/Week			Credits
			Lecture	Tutorial	Practical	
SEMESTER II						
Core	15BCS004	Programming in C	5	0	0	4
Core	15BCS005	Programming in C Lab	0	0	3	2
Core	15BCS006	Operating System	4	1	0	4
Core	15BMA002	Mathematics-II	5	0	0	4
AECC	15-----	Language-II	5	0	0	4
AECC	15LEN002	English-II	5	0	0	4
SEC	15-----	Skill Enhancement Course-I	2	0	0	2
TOTAL			26	1	3	24

Category	Code No.	Course	Hours/Week			Credits
			Lecture	Tutorial	Practical	
SEMESTER III						
Core	15BCS007	Object Oriented Programming with C++	3	1	0	4
Core	15BCS008	Data Structures using C++ Lab	0	0	3	2
Core	15BST001	Statistics-I	5	0	0	4
DSE	15-----	Discipline Specific Elective-I	5	0	0	4
GE	15-----	Generic Electives-I	3	0	0	3
AECC	15-----	Language-III	5	0	0	4
AECC	15LEN003	English- III	5	0	0	4
TOTAL			26	1	3	25

Category	Code No.	Course	Hours/Week			Credits
			Lecture	Tutorial	Practical	
SEMESTER IV						
Core	15BCS009	Visual Programming	4	1	0	4
Core	15BCS010	RDBMS with VB Lab	0	0	3	2
Core	15BST002	Statistics – II	5	0	0	4
DSE	15-----	Discipline Specific Elective-II	5	0	0	4
AECC	15-----	Language-IV	5	0	0	4
AECC	15LEN003	English-IV	5	0	0	4
AECC	15EVS201	Environmental Science	2	0	0	2
TOTAL			26	1	3	24

Category	Code No.	Course	Hours/Week			Credits
			Lecture	Tutorial	Practical	
SEMESTER V						
Core	15BCS011	Microprocessor	4	1	0	4
Core	15BCS012	Microprocessor Lab	0	0	4	2
Core	15BCS013	Programming in Java Lab	0	0	4	2
DSE	15-----	Discipline Specific Elective-III	5	0	0	4
DSE	15-----	Discipline Specific Elective-IV	5	0	0	4
GE	15-----	Generic Electives-II	5	0	0	4
SEC	15-----	Skill Enhancement Course-II	2	0	0	2
TOTAL			21	1	8	22

Category	Code No.	Course	Hours/Week			Credits
			Lecture	Tutorial	Practical	
SEMESTER VI						
Core	15BCS014	Advanced Java	5	0	0	4
Core	15BCS015	Advanced Java Lab	0	0	4	2
Core	15BCS016	Open Source technology Lab	0	0	4	2
DSE	15-----	Discipline Specific Elective-V	4	0	0	4
DSE	15-----	Discipline Specific Elective-VI	5	0	0	4
DSE	15-----	Discipline Specific Elective-VII	5	0	0	4
GE		Generic Electives-III	3	0	0	3
TOTAL			22	0	8	23

List of Discipline Specific Elective Courses

15BCS101	UNIX and Shell Programming
15BCS102	Computer Graphics
15BCS103	Computer Architecture
15BCS104	Multimedia
15BCS105	System Software
15BCS106	Internet and its Applications
15BCS107	Mobile Computing
15BCS108	Windows Programming
15BCS109	Ecommerce
15BCS110	Network Security and Cryptography
15BCS111	Data Mining and Warehousing
15BCS112	Cloud Computing
15BCS113	Software Testing
15BCS114	Management Information System
15BCS115	Object Oriented Analysis & Design
15BCS116	Software Quality & Assurance
15BCS117	Database Management System
15BCS118	Software Engineering
15BCS119	Data Communication and Networking
15BCS120	Programming in Java

List of Generic Elective Courses

15BCS151	Web Designing
15BCS152	Client side Scripting Language
15BCS153	Photoshop
15BCS154	Flash
15BCS155	Advanced Excel
15BCS156	Statistical Package for Social Science
15BCS157	Programming in Tally
15BCS158	Office Automation Tools
15BCS159	System Administration and Maintenance
15BCS160	Desktop Publishing
15BCS161	MYSQL
15BCS162	Cyber Law

List of Ability Enhancement Compulsory Courses

15LTA001	Tamil Paper - I
15LTA002	Tamil Paper - II
15LTA003	Tamil Paper - III
15LTA004	Tamil Paper - IV
15LFR001	French Paper-I
15LFR002	French Paper-II
15LFR003	French Paper-III
15LFR004	French Paper-IV
15LHN001	Hindi Paper-I
15LHN002	Hindi Paper-II
15LHN003	Hindi Paper-III
15LHN004	Hindi Paper-IV
15LEN001	English Paper-I
15LEN002	English Paper-II
15LEN003	English Paper-III
15LEN004	English Paper-IV
15EVS201	Environmental Science

List of Skill Enhancement Courses

15NSS255	NSS
15GPD251	Personality Development
15EVB261	Ethics and Values

Syllabus

Core Courses

Course Objective: This course introduces the basic computer concepts in word, excel, spreadsheet and access processing. It helps to develop familiarity in writing flowchart and algorithm development for students.

Course Outcomes:

CO-1: To enable the student to learn the major components of a computer system.

CO-2: Ability to navigate the Word Ribbon Interface to create Word documents for office use.

CO-3: To Create and design a spreadsheet for general office use.

CO-4: Understanding the basic mechanics and navigation of an Excel spread sheet and signing a worksheet for the organization purpose.

CO-5: Expertise in creating an effective PowerPoint presentation with presentation styles

CO-6: Using clip art to enhance ideas and information in a PowerPoint presentation.

CO-7: Improved working knowledge of integrating information from other Microsoft programs into a PowerPoint presentation.

CO-8: Gain competency in creating slide presentations

CO-9: Develop database skills from initial design stage to running reports and queries.

CO-10: Ability to write the algorithmic procedure of any given problem.

Unit I FUNDAMENTALS OF COMPUTER

15

Evolution Of Computers-Classification Of Computers – Inputs/Outputs – Organization Of Modern Digital Computers – Overview Of Operating System – Multitasking OS – Types Of Software.

Unit II WORD PROCESSING

15

Word Processing Programs And Their Uses – Word Basics – Formatting Features - Editing Text –Mail Merge–Tables-Macro- Special Features Of Word – Desktop Publishing Service – Converting Doc Into Www Pages.

Unit III SPREADSHEETSOFTWARE 15

Spreadsheet Programs – Applications – Menus-Commands-Toolbars – Data, Importing Data, Functions – Data Handling – Charts- Calculations – Managing Workbooks.

Unit IV DATABASE AND PRESENTATION 15

Database Management System- Tables – Queries – Forms-Report-Presentation – Slide Design - Custom Animation – Apply Sounds- Slide Show.

Unit V FUNDAMENTAL ALGORITHMS 15

Algorithm Development: Definition Of Algorithm – Recursive Algorithms – Top-Down Design – Flow Chart –Check Given Number Is Prime Or Not – Smallest Divisor Of An Integer – GCD Of Two Integers – Computing The Nth Fibonacci Number – Palindrome Checking.

TOTAL: 75Hours

Text Books:

- 1.Computing Fundamentals & C Programming,E.Balagurusamy,TataMcGrawhill,2003.
2. MS officice ,Sanjay Saxena, Vikas publication house pvt.Ltd, 2ND Edition, 2008
3. Microsoft Office 2003,The Complete Reference ,Jennifer Ackerman Kettell , Guy Hart-Davis , Curt Simmons , McGraw-Hill Osborne; 2nd edition,2003.

Reference Books:

- 1.Microsoft Office Access, The Complete Reference ,Virginia Andersen, PHI, 2nd Edition,2005
- 2.E. Horowitz, S. Sahni and S. Rajasekaran, , Computer Algorithms, Galgotia Publication,4th Edition,1999.

15BCS002 PROBLEM SOLVING TECHNIQUES LAB 0 0 4 2

Course Objective: The student learns to work in macros, mail merge, formatting document in word, working with charts, functions in excel and database creation for various applications in access. Applying sound effects and animation to images in power point can be easily done by students.

MS-Word

1. Working with formatting Document using different styles and table.
2. Working with mail merge
3. Working with macros.

Ms- Excel

4. Working with formatting, protection, goal seek and scenarios in worksheet
5. Working with Import external data, sort &filter, functions in worksheet
6. Working with types of charts
7. Working with calculations in various applications

Ms- Access

8. Working with inventory system with report
9. Working with payroll system with report
10. Working with Student information system with report

Ms- PowerPoint

11. Create text and images with various effects
12. Create animation and sound effects

Total: 60 Hours

Course Objective: This course introduces the basic concepts of Digital Logic Circuits, Gates, Encoders, Decoders and Shift Registers. The students gain knowledge in Flip Flops, ROMs and RAMs along with magnetic memories.

Course Outcomes:

CO-1: To know about the basic and compare the Number Systems and Conversions.

CO-2: To understand the concept of various logic gates and truth tables.

CO-3: To apply the laws and theorem of Boolean algebra to simplify Boolean functions.

CO-4: Use the methods of systematic reduction of Boolean expression including K-Map.

CO-5: To understand how basic binary arithmetic operations are automated in computer Systems.

CO-6: To understand the concept of combinational logic circuits.

CO-7: To design and implement different types of sequential logic circuits using flip flop.

CO-8: To design the circuits for various Synchronous Counters.

CO-9: Understand the basic hardware design of logic circuits and be able to use Asynchronous Sequential circuits.

CO-10: To be able to model & analyze various basic Magnetic memories RAMs, ROMs.

Unit I NUMBER SYSTEMS & CODES

15

Number System - Base Conversion - Binary Codes - Code Conversion. Digital Logic: Logic Gates - Truth Tables - Universal Gates

Unit II BOOLEAN ALGEBRA

15

Laws & Theorems - SOP, POS Methods - Simplification Of Boolean Functions - Using Theorems, K-Map, And Prime - Implicant Method - Implementation Using Universal Gates. Binary Arithmetic: Binary Addition - Subtraction - Various Representations Of Binary Numbers - Arithmetic Building Blocks - Adders - Subtracters.

Unit III COMBINATIONAL LOGIC 15

Multiplexers - Demultiplexers - Decoders - Encoders - Code Converters - Parity Generators & Checkers - PAL - PLA

Unit IV SEQUENTIAL LOGIC 15

RS, JK, D, and T Flip-Flops - Edge-Triggered - Master-Slave Flip-Flops. Registers: Shift Registers - Types of Shift Registers.

Unit V COUNTERS 15

Asynchronous Counters Ripple, Mod, Up-Down Counters- Decoding Gates - Synchronous Counters - Ring, Decade, Presetable, Shift Counters. Memory: Basic Terms & Ideas - Magnetic Memories - Memory Addressing - Types of ROMs - Types of RAMs

TOTAL: 75Hours

Text Books:

1. Digital Principles and Applications ,D.P.Leach & A.P.Malvino,TMH - Fifth Edition, 2002.
2. Digital Logic and Computer Design, M.Moris Mano , PHI, 4th Edition, 2001.

Reference Books:

1. Digital Computer Fundamentals, T. C.Bartee, Tata McGraw Hill, 6thEdition,1991.
2. Digital System Principles and Applications, R.J.Tocci, Pearson Education, 8th Edition2005.

15BMA001 MATHEMATICS-I 5 0 0 4

Course Objective: To develop the skills of the students in the areas of Trigonometry, Set Theory, Calculus and Algebra. . The course will also serve as a prerequisite for post graduate and specialized studies and research.

Unit I TRIGONOMETRY 15

Introduction – Angles – Expansions of $\sin\theta$ $\cos\theta$, $\tan\theta$. Expansion of $\sin\theta$, $\cos\theta$, $\tan\theta$, in terms of θ - Simple problems.

Unit II SET THEORY **15**

Sets – Operations on sets – Relations – Relations and functions: Equivalence relations – Partial order relation

Unit III MATRICES **15**

Introduction-Basic operations-Symmetric-skew symmetric-Hermitian-Skew Hermitian – Unitary-orthogonal-Inverse of a matrix -Solution of linear system(Cramer's rule)- Finding the Eigen roots and Eigen vectors of a matrix-Cayley Hamilton theorem(without proof)

Unit IV THEORY OF EQUATIONS **15**

Polynomial, equations with real coefficients, irrational roots, complex roots, and symmetric functions of roots, Transformation of equation by increasing or decreasing roots by a constant, reciprocal equations, Newton's method to find the root approximately.

Unit V DIFFERENTIAL CALCULUS **15**

Differentiation – Successive differentiation – Partial differentiation – Maxima and Minima of functions of two variables.

TOTAL: 75Hours

Text Book:

1. Allied Mathematics paper I, P. Kandaswamy and K.Thilagavathy, 1st Semester, S.Chand Publishing Pvt. Ltd. 1st Edition, 2003.

Reference Books:

1. Allied Mathematics,P.R. Vittal, Margham Publications, 4th Edition 2009.
2. Allied Mathematics, A. Singaravelu, Meenakshi Agency, 2007.

Course Objective: The learner understands the basic concepts. Also can learn reading and writing of data using arrays and pointers. Proper method for File Manipulations such as creating, processing, opening and closing learned by students.

Course Outcomes:

CO-1: Gain the knowledge of the structured programming and basic syntax of 'C' language.

CO-2: Learn the fundamental operators, data types and all library functions

CO-3: Understand the various features such as Flow control and control structures.

CO-4: Gain experience of implementing C language.

CO-5: To understand the concepts of functions and its types.

CO-6: Experience the programs by using storage classes.

CO-7: Develop and execute the 'C' programs for various types of Arrays and Strings.

CO-8: Analyse and construct the programs for Bitwise operators, Union and Structure concept.

CO-9: To write C programs with the concept of pointers, pointers & Arrays, Pointers & Files.

CO-10: Construct a file program with various operations like create, open, close, process and close.

Unit I INTRODUCTION

15

Character Set - Identifier And Keywords - Data Types - Constants - Variables - Declarations - Expressions - Statements - Arithmetic, Unary, Relational And Logical, Assignment And Conditional Operators - Library Functions.

Unit II DATA INPUT OUTPUT FUNCTIONS

15

Simple C Programs – Flow Of Control - If, If-Else, While, Do-While , For Loop, Nested Control Structures - Switch, Break And Continue, Go To Statements - Comma Operator.

Unit III FUNCTIONS AND STORAGE CLASSES **15**

Functions –Definition - Proto-Types - Passing Arguments - Recursions. Storage Classes - Automatic, External, Static, Register Variables – Multi-File Programs.

Unit IV ARRAYS AND STRUCTURES **15**

Arrays - Defining And Processing - Passing Arrays To Functions – Multi-Dimension Arrays - Arrays And String. Structures - User Defined Data Types - Passing Structures To Functions - Self-Referential Structures – Unions - Bit Wise Operations.

Unit V POINTERS AND FILES **15**

Pointers - Declarations - Passing Pointers To Functions - Operation In Pointers - Pointer And Arrays - Arrays Of Pointers - Structures And Pointers - Files : Creating , Processing ,Opening And Closing A Data File.

TOTAL:75 Hours

Text Books:

1. Programming in ANSI C,E.Balaguruswamy,TMH Publishing Company Ltd,2nd Edition,1995.
2. The C Programming Language, B.W. Kernighan and D.M.Ritchie, 2nd Edition, PHI, 1988.
3. The Complete Reference, H. Schildt, C,TMH, 4th Edition,2004.

Reference Books:

1. Programming with C, Gottfried,B.S, tion, TMH,Second Edition,1996.
2. Let us C, Kanetkar Y,BPB Publication,4th Edition,1999.

15BCS005

PROGRAMMING IN C LAB

0 0 3 2

Course Objective: This course emphasizes the nature of C language using many applications and helps to understand the need to choose the language for solving the problem. The students can understand the art of computer programming.

1. a.Sin(x)
b.Cos(x)
2. Counting the number of vowels, consonants, words, white spaces in a line of text and array of lines
3. Reverse a string & check for palindrome.
4. Substring detection and Count
5. Finding and replacing substrings
6. GCD of two numbers
7. Fibonacci sequence
8. Maximum & Minimum
9. Towers of Hanoi.
10. a. Addition and Subtraction of Matrix
b. Multiplication
- 11.a. Transpose Matrix
b. Trace of Matrix
12. a. Insertion Sort
b. Linear Search

TOTAL: 45Hours

Course Objective: This course introduces the basic concepts of Operating Systems and its services. The students learn how memory, Files, Hardware and I/O System are organized. Also learn virtual memory and process synchronization.

Course Outcomes:

- CO-1:** To demonstrate the Concepts, Structure and Design of Operating System and its functionalities.
- CO-2:** To Understand the Competencies in recognizing and using Operating System CPU Schedulers with its algorithms
- CO-3:** To identify and apply knowledge in various Software and Hardware Synchronization tools for solving Critical Section problem in Concurrent Process.
- CO-4:** To accept the tradeoffs in design and implementation of Deadlocks and its methods for Prevention, Avoidance, Detection and Recovery of Deadlocks.
- CO-5:** To identify thoroughly how Memory Management Algorithms were implemented in other types of Operating Systems.
- CO-6:** To understand how internally memory partitioning is done with all its Security issues and the Principal Requirements related to Memory Management.
- CO-7:** To examine the Hardware and Control Structures that support Virtual Memory and to assess the Operating System Algorithms to implement Virtual Memory.
- CO-8:** To know the basic concept of Files, its Organization, its Access and to examine the File Directories.
- CO-9:** To gain insight into Input Output Hardware Operations and the workings of Kernel in other Operating Systems.
- CO-10:** To design how Authentication can be provided for Securing Operating System and also learn the Encryption Standards used to manage Threats in an effective way.

Unit I INTRODUCTION

15

Views- Goals - Types of System - OS Structure - Components - Services - System Structure Layered Approach - Virtual Machines - System Design and Implementation. Process Management: Process - Process Scheduling - Cooperating Process - Threads -

Inter-process Communication. CPU Scheduling: CPU Schedulers - Scheduling Criteria - Scheduling Algorithms.

Unit II PROCESS SYNCHRONIZATION 15

Critical- Section Problem - Synchronization Hardware - Semaphores - Classical Problems of Synchronization - Critical Region - Monitors. Deadlocks: Characterization - Methods for Handling Deadlocks - Deadlock Prevention - Avoidance - Detection - Recovery.

Unit II IMEMORY MANAGEMENT 15

Address Binding - Dynamic Loading and Linking - Overlays - Logical and Physical Address Space - Contiguous Allocation - Internal & External Fragmentation. Non-Contiguous Allocation: Paging and Segmentation Schemes - Implementation - Hardware-Protection - Sharing - Fragmentation.

Unit IV VIRTUAL MEMORY 15

Demand Paging - Page Replacement - Page Replacement Algorithms - Thrashing. File System: File Concepts -. Access Methods - Directory Structures - Protection Consistency Semantics - File System Structures - Allocation Methods - Free Space Management.

Unit V I/O SYSTEM 15

Overview - I/O Hardware - Application I/O Interface - Kernel I/O Subsystem - Transforming I/O Requests to Hardware Operations - Performance. Secondary Storage Structures: Protection - Goals - Domain - Access matrix - The Security Problem - Authentication - Threats - Threat Monitoring - Encryption.

TOTAL: 75Hours

Text Books:

1. Operating System Concepts, A. Silberschatz, P.B. Galvin, Gange, John Wiley & Sons, 6th Edition, 2002.
2. Operating Systems: A Concept Based Approach, Dhamdhere.D.M, 2Ed, 2006.

Reference Books:

1. An Introduction to Operating System, H.M. Deitel, Addison Wesley, Second Edition, 1990.
2. Operating systems: A Systematic View, Davis, William.S, 6th ed, 2005.

15BMA002**MATHEMATICS-II****5 0 0 4**

Course Objective: To impart the knowledge of Integral calculus, Differential Equations, Fourier series and Laplace transform. The course will also serve as a prerequisite for post graduate and specialized studies and research.

Unit I INTEGRAL CALCULUS**15**

Integral calculus: Integration – Definite integrals – Bernoulli's formula -

Reduction formula for $\int \sin^n x dx$, $\int \cos^n x dx$, $\int \tan^n x dx$, $\int x^n e^{ax} dx$.

Unit II ORDINARY DIFFERENTIAL EQUATIONS**15**

Ordinary differential equations: First order of higher degree equations – Second order and non-homogenous linear differential equations with constant coefficient – Second order linear differential equations with variable coefficients.

UNIT III PARTIAL DIFFERENTIAL EQUATIONS**15**

Formation of partial differential equations by eliminating arbitrary constants and arbitrary function- Solutions of standard types of first order equations- $f(p,q)=0$; $f(x,p,q)=0$, $f(y,p,q)=0$, $f(z,p,q)=0$, $z = px + qy + f(p,q)$ -Lagrange method of solving linear partial differential equation $Pp + Qq = r$.

Unit IV FOURIER SERIES**15**

Fourier series of periodic functions on the interval $[c, c+2\pi]$ –Even and Odd functions- Half range series.

Unit V LAPLACE TRANSFORM**15**

Laplace transformation: Definition, Laplace transform of basic trigonometric, exponential and algebraic functions - Inverse laplace transform- Solving differential equation of second order with constant coefficients using laplace transform

TOTAL: 75 Hours

Text Book:

1. Allied Mathematics paper II, 2nd Semester, P. Kandaswamy and K.Thilagavathy, S.Chand Publishing Pvt. Ltd. 1st Edition, 2004.

Reference Books:

1. Allied Mathematics, P.R. Vittal, Margham Publications, 4th Edition 2009.
2. Allied Mathematics, A. Singaravelu, Meenakshi Agency, 2007.

15BCS007 OBJECT ORIENTED PROGRAMMING WITH C++ 3 1 0 4

Course Objective: The course helps the students to know various structures in c++ and to explain them algorithms for performing various operations on data structure. This makes them familiar with OOPS concepts.

Course Outcomes:

CO-1: Student evaluated from procedural language concepts to basic object oriented programming concepts.

CO-2: Gain knowledge to developed simple application using object oriented programming concepts.

CO-3: Develop simple application program using key structured programming constructs: declaration and control statements.

CO-4: Familiar how to apply function and arrays.

CO-5: Understand the structure of C++ programming language and familiar with how to define and use Class.

CO-6: Ability to write real time program using the concepts of constructors, destructors, inheritance and polymorphism.

CO-7: Apply the advanced features of C++ specifically Streams and I/O concepts.

CO-8: Capable of writing program using File concepts.

CO-9: Be exposed to basic data structure concepts.

CO-10: Master using the key data structure concepts: stack, queue, linked list, double linked list, tree, graph and its applications.

Unit I PRINCIPLES OF OBJECT ORIENTED PROGRAMMING (OOP) 14

Software Evolution-OOP Paradigm-Basic Concepts of OOP-Benefits of OOP- Object Oriented Languages-Applications of OOP.

Unit II INTRODUCTION TO C++ 15

Tokens, Keywords, Identifiers, Variables, Operators, Manipulators, Expressions and Control Structures in C++; Pointers - Functions in C++ - Main Function - Function Prototyping - Parameters Passing in Functions - Values Return by Functions - Inline Functions - Friend and Virtual Functions

Unit III CLASSES AND OBJECTS 14

Constructors and Destructors; and Operator Overloading and Type Conversions - Type of Constructors - Function overloading.

Unit IV INHERITANCE 14

Single Inheritance - Multilevel Inheritance - Multiple Inheritance - Hierarchical Inheritance - Hybrid Inheritance. Pointers, Virtual Functions and Polymorphism; Managing Console I/O operations.

Unit V WORKING WITH FILES 15

Classes for File Stream Operations - Opening and Closing a File - End-of-File Deduction - File Pointers - Updating a File - Error Handling during File Operations - Command line Arguments.

TOTAL:72 Hours

Text Books:

1. Object Oriented Programming with C++, E.Balagurusamy, TMH, 2nd Edition,1995.
2. Fundamentals of Data Structures in C++,E.Horowitzand S.Shani,,Galgotia Publication,3rd Edition,1999.

Reference Books:

1. Object Oriented Programming in Microsoft C++, Robert Lafore, Galgotia publication, 2nd Edition, 2001.
2. Object Oriented Programming in C++, Pandiyaraja.P, 2008.

15BCS008**DATA STRUCTURE USING C++ LAB****0 0 3 2**

Course Objective: This lab provides detailed knowledge of Arrays, Pointers, Stack Operations, Doubly Linked list, Graphs and Recursion. Also provide knowledge in Prefix, Post Fix Expression evaluation and tree Traversal techniques.

1. Implement PUSH, POP operations of stack using Arrays.
2. Implement PUSH, POP operations of stack using Pointers.
3. Implement add, delete operations of a queue using Arrays.
4. Implement add, delete operations of a queue using Pointers.
5. Conversion of infix to postfix using stack operations
6. Postfix Expression Evaluation.
7. Prefix Expression Evaluation
8. Addition of two polynomials using Arrays and Pointers.
9. Creation, insertion, and deletion in doubly linked list.
10. Binary tree traversals (in-order, pre-order, and post-order) using linked list.
11. Depth First Search for Graphs using Recursion.
12. Breadth first Search for Graphs using Recursion.

TOTAL: 45Hours

Course Objective: To develop the skills of the students in the concepts of Statistics and Design of Experiments. The course will also serve as a prerequisite for post graduate and specialized studies and research.

Unit I INTRODUCTION TO STATISTICS 15

Introduction – Scope and Limitations of Statistical methods- Diagrammatic and Graphical representation of data- measures of Central tendency: Mean, Median, Mode.

Unit II MEASURES OF DISPERSION 15

Measures of Dispersion- Range, Quartile Deviation, Mean Deviation, Standard Deviation and Coefficient of variation

Unit III CORRELATION AND REGRESSION ANALYSIS 15

Correlation: Types of Correlation, Scatter diagram method, Karl Pearson's Coefficient of correlation, Spearman's Rank Correlation Coefficient. **Regression:** Regression Lines and Regression equations and simple problems.

Unit IV TESTING OF HYPOTHESIS 15

Concept of Sampling and Sampling Distribution- Standard error – Tests of Significance for small samples: Student's Distribution: Single- two sample and paired t-test, The F-test (variance – Ratio test) Chi-Square tests for Goodness of Fit and test for independence of attributes in contingency table.

Unit V ANOVA 15

Basic Principles of Experimentation – Analysis of Variance- One way and Two Way Classifications – Computing Randomized Design – Randomized Block Design- Latin Square Design.

TOTAL: 75HOURS

Text Book:

1. S.P. Gupta, Statistical Methods, 44th Edition, Sultan Chand & Sons, 2014.

Reference Books:

1. P.R. Vittal and V. Malini, Statistical and Numerical Methods, Margham Publications, 1st Edition, 2007.
2. S.C. Gupta and V.K. Kapoor, Fundamentals of Applied Statistics, Sultan Chand & Sons, 3rd Edition, 2001.
3. Beri G, Business Statistics, Tata McGraw Hill Publishing Company Limited, 2009.

15BCS009**VISUAL PROGRAMMING****4 1 0 4**

Course Objective: This course introduces the basic concepts of Visual Programming and functions, loops, arrays, error trapping and debugging. Testing is possibly done in a better way along with File functions and OLE concepts.

Course Outcomes:

- CO-1:** To understand about the fundamental skills in utilizing the tools of a visual environment in terms of the set of available command menus and toolbars. Design, create, build, and debug Visual Basic applications and explore Visual Basic's Integrated Development Environment.
- CO-2:** Define and implement form objects including text boxes, message boxes, command Buttons, labels, controls, dialog boxes, menus, frames, picture boxes, data arrays, control Arrays, pull-down menus and combo boxes.
- CO-3:** Demonstrate knowledge of programming terminology and how applied using Visual Basic variables, selection statements, repetition statements, etc.
- CO-4:** Create, compile, and execute simple Windows Forms and Console applications. Explain variables and data types used in program development.
- CO-5:** Learn to print on the form directly with formatted display. Use message dialogs to Display messages. Learn about Subroutine vs. Function Methods. Declaring and using methods. Passing Arguments: Pass-by-Value vs. Pass-by-Reference
- CO-6:** Write determinate and indeterminate Loops to execute statements in a program repeatedly. Use nested control statements.

- CO-7:** Declare, allocate, and initialize array data structures. Access and modify individual elements of arrays. Sort and Search lists or tables of data stored in arrays. Declare and manipulate multidimensional arrays. Pass arrays to methods.
- CO-8:** Create Objects Classes with Methods, Instance Variables and Properties. Understand different types of scope and access of the scope of the objects. Learn about Instance variables vs. local variables.
- CO-9:** Implement SDI and MDI applications while using forms, dialogs, and other types of GUI components. Learn about programs using mouse activities and keyboard activities.
- CO-10:** To understand about File handling, and File system Objects. Develop DLL server and Automate COM/OLE.

Unit I INTRODUCTION 15

Customizing a Form - Writing Simple Programs - Toolbox - Creating Controls - Name Property - Command Button - Access Keys - Image Controls - Text Boxes - Labels - Message Boxes - Grid - Editing Tools - Variables - Data Types - String - Numbers.

Unit II FUNCTIONS AND LOOPING 15

Displaying Information - Determinate Loops - Indeterminate Loops - Conditionals - Built-in Functions - Functions and Procedures.

Unit III ARRAYS AND ERROR TRAPPING 15

Lists - Arrays - Sorting and Searching - Records - Control Arrays - Combo Boxes - Grid Control - Projects with Multiple forms - Do Events and Sub Main - Error Trapping.

Unit IV TESTING AND DEBUGGING 15

VB Objects - Dialog Boxes - Common Controls - Menus - MDI Forms – Testing, Debugging and Optimization - Working with Graphics.

Unit V OLE AND FILES 15

Monitoring Mouse activity - File Handling - File System Controls - File System Objects - COM/OLE - automation - DLL Servers - OLE Drag and Drop.

TOTAL: 75Hours

Text Books:

1. Visual Basic 6 from the Ground up, Gary Cornell, Tata McGrawill, 2nd Edition, 1999.

2. Visual Basic 6 (The Complete Reference), Noel Jerke, Tata McGraw Hill, 2nd Edition, 1999.

Reference Books:

1. Visual Basic 2005 for Programmers, Deitel.P.J, 2nd Ed, 2006.

2. Visual Basic Programming 2010 Black Book, Kogent Learning Solution, Dream Tech, Platinum Edition,

15BCS010

RDBMS WITH VB LAB

0 0 3 2

Course Objective: This course gives practical training of RDBMS with VB. Using any RDBMS package students can create database and perform the operations such as Insertion, (b) Deletion, (c) Modification, (d) Generating a reports (Simple) for the Following Systems:

1. Payroll Processing
2. Mark sheet Processing
3. Savings bank account for banking
4. Inventory System
5. Invoice system
6. Library information system
7. Student information system
8. Income tax processing system
9. Electricity bill preparation system
10. Telephone directory maintenance.

TOTAL: 45Hours

Course Objective: To develop the skills of the students in Probability and the concepts of Time series, Index numbers as well as Non-Parametric test. The course will also serve as a prerequisite for post graduate and specialized studies and research.

Unit I PROBABILITY **15**

Probability- Different approaches of Probability-Addition theorem, Multiplication theorem-Conditional probability- Baye's theorem- Mathematical Expectation and Variance.

Unit II PROBABILITY DISTRIBUTION **15**

Discrete distribution: Binomial distribution, Poisson distribution Continuous distribution: Exponential distribution , Uniform distribution , Normal distribution.

Unit III TIME SERIES **15**

Time Series Analysis: Component of Time Series-Measurement of trend-Method of Semi-averages, Moving averages method, Method of least squares-Measurement of Seasonal variations: Method of simple averages, Mmoving averages method.

Unit IV INDEX NUMBERS **15**

Index numbers: Types of index number, Laspeyre's method , Paasche's method , Fisher's method-Test of adequacy of index number formulae: Time reversal test and Factor reversal test-Chain index numbers –Simple problems.

Unit V NON-PARAMETRIC TEST **15**

Non parametric test- Sign test –Rank sum test, Test of Correlation, chi square test.

TOTAL: 75 Hours

Text Book:

1. S.P. Gupta, Statistical Methods, 44th Edition, Sultan Chand & Sons,2014.

Reference Books:

1. P.R. Vittal and V. Malini, Statistical and Numerical Methods, Margham Publications, 1st Edition, 2007.
2. S.C. Gupta and V.K. Kapoor, Fundamentals of Applied Statistics, Sultan Chand & Sons, 3rd Edition, 2001.
3. Beri G, Business Statistics, Tata McGraw Hill Publishing Company Limited, 2009.

15BCS011**MICROPROCESSOR****4 1 0 4**

Course Objective: This course introduces the basic concepts of Micro Processors and its Application. The students gain knowledge in writing assembly language programs. They also know the details of interrupts, I/O, Memory interfaces and various code conversions.

Course Outcomes:

- CO-1:** Understand and apply the principles of Assembly Language Programming in developing microprocessor based application such as controls in electronic goods, swiping card system.
- CO-2:** Ability to understand the basic functioning of 8085 and do programs in hex code which does not require any compiler to translate the code.
- CO-3:** An ability to understand the basic functioning of multiprocessor systems
- CO-4:** Understand basic terminology and describe the component parts and operation of a micro-processor and microcomputer system.
- CO-5:** To understand interfacing of 8 bit microprocessor with memory and peripheral chips involving system design.
- CO-6:** To understand techniques for faster execution of instructions and improve speed of operation and performance of microprocessors.
- CO-7:** Understand how the knowledge of basic sciences and engineering are applied to the field of computer hardware and software after studying various code conversions.
- CO-8:** Interpret and write real time embedded applications.
- CO-9:** To understand the concepts related to I/O and memory interfacing.
- CO-10:** An in-depth knowledge of applying the concepts in real time applications.

Unit I INTRODUCTION TO MICRO PROCESSORS 15

Introduction To Micro Computers, Microprocessors And Assembly Languages - Microprocessor Architecture And Its Operations - 8085 MPU - 8085 Instruction Set And Classifications.

Unit II WRITING ASSEMBLY LEVELS PROGRAMS 15

Programming Techniques Such As Looping, Counting And Indexing Addressing Nodes - Data Transfer Instructions - Arithmetic And Logic Operations - Dynamic Debugging.

Unit III COUNTERS AND TIME DELAYS 15

Hexadecimal Counter – Modulo L0 Counter - Pulse Timings For Flashing Lights - Debugging Counter And Time Delay Program - Stack - Subroutine - Conditional Call And Return Instructions.

Unit IV CONVERSIONS 15

BCD To Binary And Binary To BCD Conversions - BCD To HEX And HEX To BCD Conversions - AS CII To BCD And BCD To ASCII Conversions - BCD To Seven Segment LED Code Conversions - Binary To ASCII And ASCII To Binary Conversions - Multibyte Addition - Multibyte Subtraction - BCD Addition - BCD Subtraction - Multiplication And Division.

Unit V INTERRUPT AND INTERFACES 15

Interrupt - Implementing Interrupts - Multiple Interrupt - 8085 - Trap - Problems On Implementing 8085 Interrupt - DMA - Memory Interfaces - RAM & ROM - I/O Interface - Direct I/O - Memory Mapped I/O.

TOTAL: 75Hours

Text Books:

1. Microprocessor Architecture, Programming and Applications with 8085/8080A, R. S. Gaonkar, Wiley Eastern Limited, 1990.
2. Introduction to Microprocessor, A. Mathur, Third Edition, Tata McGraw-Hill Pub. Co. Ltd, 1993.

Reference Books:

1. Microprocessor & Interfacing: Programming & Hardware, Hall, Douglas. V, 2nd Edition.
2. Microprocessors and MicroComputers Based System Design, Raffiquzzman. M, 2nd Ed, 1995.

15BCS012**MICROPROCESSOR LAB****0 0 4 2**

Course Objective: This course gives practical training for developing assembly language programs such as Addition, Subtraction, Multiplication, Division, ascending and Descending order, largest and smallest element in an array, reversing an array.

1. a) 8 – Bit Addition b) 8 – Bit Multiplication
2. a) BCD Subtraction b) BCD Multiplication.
3. a) 8- Bit Subtraction b) 8 – Bit Division
4. Searching for an Element in an Array.
5. a) Sorting in Ascending Order b) Sorting in Descending Order.
6. a) Finding Largest Element in Array b) Finding Smallest Element in Array.
7. a) Reversing an array Elements b) Block Move.
8. a) BCD to HEX b) HEX to BCD Conversion
9. a) Binary to ASCII, ASCII to Binary b) BCD to ASCII, ASCII to BCD.
10. a) Square of a Single Byte HEX number b) Square of Two Digit BCD number.
11. Square root of Single Byte HEX Number.
12. Square root of Two Digit BCD Number.

TOTAL: 60Hours

Course Objective: This course gives practical training in JAVA to develop various application programs, applet programs, utility programs.

1. Program to find the area and perimeter of a Circle using Buffered Reader Class
2. Removal of Substring from a String using String Buffer Class
3. Determining the order of numbers generated randomly using Random Class
4. String Manipulation using Char Array
5. Usage of Vector Class
6. Implementing Thread based Applications
7. Usage of Calendar Class
8. Working with Frames and Controls
9. Working with Dialogs and Menus
10. Working with Panel and Layout
11. Working with Graphics
12. Working with Colors and Fonts

TOTAL: 60Hours

Course Objective: This course gives an insight into advanced features of Java which concentrates in Java Beans, EJB, RMI, JSP, ORB Protocol; Java beans API, writing RMI clients –Pushing data from RMI Servlet.

Course Outcomes:

- CO-1:** To understand some advanced programming concepts to deal with complex data objects as whole entities, rather than by twiddling with their elements.
- CO-2:** This module exposes students to make depth and breadth of modern programming practice with the goal of better programmers.
- CO-3:** Aims to introduce the students to involve the concepts of advanced programming and practice on reusing components. It focuses on Graphical User Interface (GUI), multithreading, networking and database manipulation.
- CO-4:** It focuses on Graphical Users with multithreading, networking and database manipulation to complete the module to write sophisticated Java applications.
- CO-5:** Develop Swing-based GUI is used to develop client/server applications and TCP/IP socket programming for Update and retrieve the data from the databases using SQL. in Real world applications.
- CO-6:** To implement the distributed applications using RMI with component-based Java software using JavaBeans for developing server side programs in the form of servlets.
- CO-7:** Develop server side programs to understand difference between Swing and AWT programming and to define Swing components with list of Swing Packages.
- CO-8:** To design and implement the Two-Tier Client Server Model to Use JDBC and to access a database connection for creating executing of the Result Set object and the Result Set Meta Data interface.
- CO-9:** To analyse a problem and determine what problem elements to represent as functions of EJB objects for Communication skills (personal and academic).
- CO-10:** To develop Effective parameterization and inheritance to promote reuse programs with Java bean networking and multithreading and to Compose more complex programs that implement Assessment Instruments Allocation.

Unit I SERVLET**15**

Overview – The Java Web Server – Your First Servlet – Servlet Chaining – Server Side Includes- Session Management – Security – HTML Forms – Using JDBC In Servlets – Applet To Servlet Communication.

Unit II JAVA BEANS**15**

The Software Component Assembly Model- The Java Beans Development Kit- Developing Beans – Notable Beans – Using Infobus - Glasgow Developments - Application Builder Tool- JAR Files-Introspection-Bound Properties-Persistence-Customizers - Java Beans API.

Unit III EJB**15**

EJB Architecture- EJB Requirements – Design And Implementation – EJB Session Beans- EJB Entity Beans-EJB Clients – Deployment Tips, Tricks And Traps For Building Distributed And Other Systems – Implementation And Future Directions Of EJB-Variable In Perl- Perl Control Structures And Operators – Functions And Scope.

Unit IV RMI**15**

Overview – Developing Applications With RMI:Declaring & Implementing Remote Interfaces-Stubs & Skeletons,Registering Remote Objects,Writing RMI Clients –Pushing Data From RMI Servlet – RMI Over Inter-ORB Protocol.

Unit V JSP**15**

Introduction JSP-Examining MVC And JSP -JSP Scripting Elements & Directives-Working With Variables Scopes-Error Pages - Using Java Beans In JSP Working With Java Mail-Understanding Protocols In Javamail-Components-Javamail API-Integrating Into J2EE-Understanding Java Messaging Services-Transactions.

TOTAL: 75Hours**Text Books:**

1. J2EE 1.4 Bible,J.McGovern,RAdatia,Y.Fain,Wiley-dreamtech India Pvt.Ltd, NewDelhi,2003.
2. Java 2 Complete Reference, H. Schildt, 5th Edition, Tata McGraw-Hill,NewDelhi,2002.

Reference books:

1. Java Servlets, K. Moss, Second edition, Tata McGraw Hill, New Delhi, 1999.
2. Inside Servlets, D. R. Callaway, Addison Wesley, Boston, 1999.
3. Java Beans from the Ground Up, Joseph O'Neil, Tata McGraw Hill, New Delhi.
4. Enterprise JavaBeans, Tom Valesky, Addison Wesley, 1998.
5. Core Java Vol II Advanced Features, Cay S Horstmann & Gary Cornell, Addison Wesley.

Course Objective: This course gives practical training in HTML to Servlet Communication, JSP Beans used to create Jsp program, RMI to create Web Services, Email creation and manipulation, Web applications and Session management is done by students.

1. HTML to Servlet Communications
2. Servlet to HTML Communication
3. Applet to Servlet Communication
4. Servlet to Applet Communication
5. Designing online applications with JSP
6. Creating JSP program using JavaBeans
7. Working with Enterprise JavaBeans
8. Performing Java Database Connectivity.
9. Creating Web services with RMI.
10. Creating and Sending Email with Java
11. Building web applications
12. Finding Simple Interest using Session Management.

TOTAL: 60 Hours

Course Objective: This course gives practical training in PHP program in functions, Session, Cookies and table creation. Largest and checking palindrome is done by students in Python programming. In MYSQL student information and College applications is created by students.

1. Develop a PHP program using controls and functions
2. Develop a PHP program and check message passing mechanism between pages.
3. Develop a PHP program using String function and Arrays.
4. Develop a PHP program to display student information using MYSQL table.
5. Develop a PHP program to design a college application form using MYSQL table.
6. Develop a PHP program using parsing functions (use Tokenizing)
7. Develop a PHP program and check Regular Expression, HTML functions, Hashing functions.
8. Develop a PHP program and check File System functions, Network functions, Date and time function.
9. Develop a PHP program using session
10. Develop a PHP program using cookie and session
11. Develop a PYTHON program for finding Largest of n numbers.
12. Develop a PYTHON program for checking palindrome of a string.

TOTAL: 60Hours

Syllabus

Discipline Specific Electives

Course Objective: This course increases the knowledge practically in Unix and Shell Programming. Also it gives training in Unix commands with parameters and Files handling. Program Development and Document Preparation methodology is also given.

Course Outcomes:

CO-1: To identify and use UNIX utilities to create and manage simple file processing operations, organize directory structures with appropriate security.

CO-2: To analyse the working of the user defined commands and will be able change the permissions associated with files.

CO-3: To understanding the concept of Shell and the different usage of the commands in shell.

CO-4: To understand all the UNIX utilities and implement shell scripting.

CO-5: To develop shell scripts to perform more complex tasks.

CO-6: To implement the interrupts handling and file tracking using shell programming.

CO-7: Effectively use software development tools including libraries, pre-processors, compilers, linkers, and make files.

CO-8: To analyse process control, Daemon characteristics, coding rules and error logging

CO-9: Comprehend technical documentation, prepare simple readable user documentation and adhere to style guidelines

CO-10: To be able to build an application/service over a Unix system

Unit I INTRODUCTION

15

File And Common Commands - Shell - More About Files - Directories- Unix System - Basics Of File Directories And Filenames - Permissions - Modes - Directory Hierarchy - Devices - The Grep Family - Other Filters - The Stream Editor Sed - The Awk Pattern Scanning And Processing Language - Files And Good Filters.

Unit II CONCEPTS OF SHELL

15

Command Line Structure - Metacharacters - Creating New Commands - Command Arguments And Parameters - Program Output As Arguments - Shell Variables - More On I/O Redirection - Loop In Shell Programs - Bundle - Setting Shell

Attributes, Shift Command Line Parameters - Exiting A Command Or The Shell, Evaluating Arguments - Executing Command Without Invoking A New Process - Trapping Exit Codes -- Conditional Expressions.

Unit III SHELL PROGRAMMING 15

Customizing The Cal Command, Functions Of Command, While And Until Loops - Traps - Catching Interrupts - Replacing A File - Overwrite - Zap - Pick Command - News Command - Get And Put Tracking File Changes.

Unit IV FEATURES IN UNIX 15

Standard Input And Output - Program Arguments - File Access - A Screen At A Time Printer - On Bugs And Debugging - Examples - Zap - Pick - Interactive File Comparison Program - Accessing The Environment - Unix System Calls - Low Level I/O, File System Directories And Modes, Processors, Signal And Interrupts.

Unit V PROGRAM DEVELOPMENT AND DOCUMENT PREPARATION 15

Program Development - Four Function Calculator - Variables And Error Recovery - Arbitrary Variable Names, Built In Functions, Compilation Into A Machine, Control Flow And Relational Operators, Functions And Procedures - Performance Evaluation - Ms Macro Package - Troff Level - Tbl And Eqn Preprocessors - Manual Page - Other Document Preparation.

TOTAL: 75Hours

Text Books:

1. The UNIX Programming Environment, Brian W. Kernighan, Rob Pike - PHI, 1984.
2. UNIX: Concepts & Applications, Das.S, 4Ed, 2006.

Reference Books:

1. UNIX Network Programming: The Sockets Networking API, Stevens.W.R, 2004.
2. UNIX & Shell Programming: A Textbook, Forouzan, Behrouz.A, 2003.

Course Objective: This Course Introduces The Concepts Of Computer Graphics And Its Components To Enrich The View Of The Image. It Also Gives An Idea About Two And Three Dimensional Modeling Concepts And Viewing Concepts.

Course Outcomes:

CO-1: To understand the basics of display devices

CO-2: To get aware of Drawing fundamentals with its algorithms.

CO-3: To get familiar in the concepts of attributes.

CO-4: To understand various types of Transformations and its concepts.

CO-5: To understand the concepts of Clipping Algorithms.

CO-6: To create awareness in various Input Devices.

CO-7: To understand the concepts of Three Dimensional Display Methods.

CO-8: To understand the concepts of Three Dimensional Transformations.

CO-9: To get aware of Three Dimensional Viewing.

CO-10: To understand the concepts of various Removal Methods.

Unit I INTRODUCTION TO COMPUTER GRAPHICS

15

Video Display Devices- Raster Scan Systems -Random Scan Systems - Interactive Input Devices - Hard Copy Devices - Graphics Software - Output Primitives - Line Drawing Algorithms - Initialising Lines - Line Function - Circle Generating Algorithms.

Unit II ATTRIBUTES OF OUTPUT PRIMITIVES

15

Line Attributes - Color And Grayscale Style - Area Filling Algorithms - Character Attributes Inquiry Functions - Two Dimensional Transformation - Basic Transformation - Composite Transformation - Matrix Representation - Other Transformations.

Unit III TWO - DIMENSIONAL VIEWING

15

Window- To View Port Co-Ordinate Transformation - Clipping Algorithms - Interactive Input Methods - Physical Input Devices - Logical Classification Of Input Devices - Interactive Picture Construction Methods.

Unit IV THREE - DIMENSIONAL CONCEPTS**15**

Three Dimensional Display Methods - Parallel Projection - Perspective Projection - Depth Cueing - Visible Line And Surface Identification Three Dimensional Transformations.

Unit V THREE DIMENSIONAL VIEWING**15**

Projection - Viewing Transformation - Implementation Of Viewing Operations - Hidden Surface And Hidden Line Removal – Backface Removals.

TOTAL: 75 Hours**Text Books:**

1. Computer Graphics,D.Hearn and M.P.Baker - Prentice Hall of India - 1997.
2. Principles of Interactive Computer Graphics, W.M. Newman and RF.Sproull - McGrawHill International Edition - 1979.

Reference Books:

1. Computer Graphics, Multimedia and Animation,Pakhira M.K, 2008.
2. Computer Graphics using Open GL, Hill F.S, 2nd Edition, 2001

Course Objective: This course introduces the basic concepts of computer Architecture such as CPU, Pipelining, I/O, Memory organization, asynchronous data transfer, DMA, Memory hierarchy, cache and virtual memory

Course Outcomes:

CO-1: To understand the concepts of stack organization, types of instructions and Addressing modes.

CO-2: Introduction to RISC architectures and program control.

CO-3: To be well versed in pipelining concepts and intermediate RISC pipelining

CO-4: To learn the basics of Array processor and vector processing.

CO-5: Ability to understand the basic arithmetic operations.

CO-6: Understand the concept of Floating point on decimal arithmetic operations.

CO-7: Ability to understand the concept of I/O organization.

CO-8: To conceptualize the basics of interrupts, DMA and serial communications.

CO-9: Ability to design memory organization that uses banks for different word size operations.

CO-10: To learn the concept of cache and virtual memory, Inter-processor arbitration.

Unit I CENTRAL PROCESSING UNIT 15

General Registers and Stack Organization-Instruction Formats- Addressing Modes – Data Transfer and Manipulations – Program Control – RISC.

Unit II PIPELINING 15

Introduction-Types of Pipelining-Arithmetic, Instruction And RISC Pipelining - Vector Processing, Array Processor.

Unit III COMPUTER ARITHMETIC 15

Addition and Subtraction – Multiplication And Division Algorithms – Floating Point On Decimal Arithmetic Operations.

Unit IV INPUT/ OUTPUT ORGANIZATION 15

Peripheral Devices – I/O Interfaces – Asynchronous Data Transfer- Modes Of Transfer – Priority Interrupt – DMA – I/O Processors – Serial Communications.

Unit V MEMORY ORGANIZATION 15

Memory Hierarchy – Main Memory – Auxillary Memory – Associative, Cache and Virtual Memory – Interconnection Structures –Inter-Processor Arbitration.

TOTAL: 75 Hours

Text Books:

1. Computer System Architecture, Morris Mano, Third Edition, PHI, 1994.
2. Computer system Architecture, J.P. Hayes, Mc-Grawhill – 1988.

Reference Books:

1. Advanced Computer Architecture, Hwang, Kai, TMH
2. Computer Architecture and parallel processing, Bartee, Thomas, TMH, 1991.

Course Objective: This course introduces the basic concepts of multimedia and its components such as text, image, video, Graphics and Animation. Also provides the emerging trends of multimedia.

Course Outcomes:

CO-1: Identify and describe the function of the general skill sets in the multimedia industry.

CO-2: To understand the basic components of a multimedia project.

CO-3: Identify the basic hardware and software requirements for multimedia development and playback.

CO-4: Making Instant Multimedia, Multimedia Software and Authoring Tools.

CO-5: Describe different multimedia data in digital formats and compare text, audio, image and video data.

CO-6: Working Exposure on Tools like Dream Weaver, Flash, Photoshop Etc.,

CO-7: Ability to designing for the WWW and Web page makers and editors.

CO-8: Working On the Web, Multimedia applications and media Communication.

CO-9: Identify the future multimedia computing technologies.

CO-10: To understand the Multimedia conferencing and CD-ROM technology.

Unit I INTRODUCTORY CONCEPTS 15

Multimedia – Definitions, CD-ROM And The Multimedia Highway, Uses Of Multimedia, Introduction To Making Multimedia – The Stages Of Project, The Requirements To Make Good Multimedia, Multimedia Skills And Training, Training Opportunities In Multimedia. Motivation For Multimedia Usage, Frequency Domain Analysis, Application Domain.

Unit II MULTIMEDIA 15

Hardware And Software: Multimedia Hardware – Macintosh And Windows Production Platforms, Hardware Peripherals – Connections, Memory And Storage Devices, Media Software – Basic Tools, Making Instant Multimedia, Multimedia Software And Authoring Tools, Production Standards.

Unit III MULTIMEDIA MAKING IT WORK **15**

Multimedia Building Blocks – Text, Sound, Images, Animation And Video, Digitization Of Audio And Video Objects, Data Compression: Different Algorithms Concern To Text, Audio, Video And Images Etc., Working Exposure On Tools Like Dream Weaver, Flash, Photoshop Etc.,

Unit IV MULTIMEDIA AND THE INTERNET: **15**

History, Internet Working, Connections, Internet Services, The World Wide Web, Tools For The WWW – Web Servers, Web Browsers, Web Page Makers And Editors, Plug-Ins And Delivery Vehicles, HTML, VRML, Designing For The WWW – Working On The Web, Multimedia Applications – Media Communication, Media Consumption, Media Entertainment, Media Games.

Unit V MULTIMEDIA-LOOKING TOWARDS FUTURE: **15**

Digital Communication and New Media, Interactive Television, Digital Broadcasting, Digital Radio, Multimedia Conferencing, Assembling And Delivering A Project-Planning And Costing, Designing And Producing, Content And Talent, Delivering, CD-ROM Technology.

TOTAL: 75 Hours

Text Books:

1. Multimedia & Communication Systems, S. Heath, Focal Press, UK, 1999.
2. Multimedia: Making it work, T. Vaughan, Tata McGraw Hill, New Delhi, 1999, 4th Edition.
3. Multimedia System Design, K. Andleigh and K. Thakkar, PHI, New Delhi, 2000.

Reference Books:

1. Multimedia Handbook, Keyes, TMH, 2000.
2. Multimedia: Computing, Communications & Applications, R. Steinmetz and K. Naharstedt Pearson, Delhi, 2001.

Course Objective: This course introduces the basic concepts of Compilers, Assemblers, Linkers, and Loaders. Students may get the in depth knowledge of code optimization, relocatability, and various software tools.

Course Outcomes:

CO-1: Students can able to understand the Evolution of System software, various models available in system software and system processors

CO-2: Understand the basic knowledge of system software by acquiring the knowledge about various processors and models of computer system.

CO-3: Student will be able to develop elementary assembler and interpreter

CO-4: Understand the basic elements of assembler, Designing the two phase assembler and single phase assembler for IBM PC.

CO-5: Students can able to understand the basic grammar for programming language, phasing, storage allocation, Compilation of Expressions and Control Structures, Code Optimization and Compiler Writing Tools. Students can also able to learn the Software Process for Interactive Environment.

CO-6: Understand the various Aspects of compilation by gathering knowledge about code optimization, compiler writing tools and storage allocation.

CO-7: Student will understand the role played by system software's such as linker, loader and compilers in the development of IT solutions.

CO-8: Have an understanding of foundation to design of loaders and Linkers with detailed study about linkage editor of IBM PC.

CO-9: Acquire a working knowledge of various software tools to solve real life problems using a Soft Computing approach that will help them in industry oriented learning.

CO-10: Students can able to build software tool by understanding the basic operation of text editor, Interpreters and Program Generators, Debug Monitors and Programming Environments.

Unit I INTRODUCTION **15**

System Software - Components Of System Software Evolution By System Software – Model Of Computer System; Introduction To Software Processors.

Unit II ASSEMBLERS **15**

Elements Of Assembly Language Programming - Over View Of The Assembly Process - Design Of Two Pass Assembler - A SinglePass Assembler For The IBM PC - Macros And Macro Processors.

Unit III COMPILERS **15**

Aspects Of Compilation - Overview Of The Compilation Process - Programming Languages Grammars – Scanning:- Parsing - Storage Allocation - Compilation Of Expressions And Control Structures - Code Optimization – Compiler Writing Tools, Software Process For Interactive Environment

Unit IV LOADERS AND LINKAGE EDITORS **15**

Loading, Linking and Relocation – Program – Relocatability - Overview Of The Editing - A Linkage Editor For The IBM PC - Linking For Program Over-Lays

Unit V SOFTWARE TOOLS **15**

Spectrum of Software Tools - Text Editors - Interpreters And Program Generators - Debug Monitors - Programming Environments.

TOTAL: 75 Hours

Text Books:

1. Introduction to system software: ,Dhamdhere , Tata McGraw Hill.
2. System Software made easy, Jayasimhan, TMH, 2nd Revised Edition,

Reference Books:

1. System Software, “An Introduction to System Programming”, Leland L.Beck, AddisonWesley.
2. System Software An Introduction tosystem programming, L.Beck,3rd Edittion, 2007.

Course Objective: This course introduces the basic concepts of internet, Email, HTML and various Web Browsers, E-marketing, CRM credit card payments Digital cash and e-wallets micro payments- smart card.

Course Outcomes:

CO-1: Learn the basic concepts of World Wide Web and Computer Languages.

CO-2: To be well versed in Types of Programming Languages and History of World Wide Web.

CO-3: Connecting to the internet and Features of Internet with clear explanation about basic internet Package.

CO-4: To Understand the Internet Explorer (IE) Features, Enable IE and File Transmission Protocol (FTP).

CO-5: E-mail uses and Features with clear concepts.

CO-6: Basic ideas about Instant Messages and Web sites used for instant Messaging.

CO-7: Basic idea about HTML tags and Web page creation.

CO-8: To be well versed in simple HTML programs.

CO-9: To understand the concept of E-Marketing.

CO-10: To understand the CRM credit card Payments Digital cash and E-wallets micro payments and smart card.

Unit I INTRODUCTION TO COMPUTERS

15

Programming Language Types History Of Internet Personal Computers History Of World Wide Web- Micro Software .NET Java-Web Resources

Unit II WEB BROWSERS

15

Internet Explorer- Connecting To Internet Features Of Internet Explorer6 Searching The Internet- Online Help And Tutorials- File Transmission Protocol (FTP) Browser Settings.

Unit III FILES AND E-MAIL MANIPULATION

15

Attaching A File, Electronic Mail Creating An E-Mail Id Sending And Receiving Mails Attaching File- Instance Messaging - Other Web Browsers.

Unit IV HTML BASICS**15**

Introduction To HTML Headers- Linking- Images-Special Characters And Line Breaks- Unordered Lists- Simple HTML Programs.

Unit V ELECTRONIC MARKETING**15**

E-Marketing Consumer Tracking Electronic Advertising Search Engine-Crm Credit Card Payments Digital Cash And E-Wallets Micro Payments- Smart Card.

TOTAL: 75 Hours**Text books:**

1. Internet and World Wide Web H.M.Deitel, P.J. Deitel and A.B.Goldberg, PHI, , Third edition, 2004.
2. Computer network and Internet with its applications, Comer, Douglas, 4th Edition, 2008.

Reference Books:

1. The Internet- Complete Reference, Harley Hahn, Tata McGraw Hill, 2004
2. Internetworking Technologies: An Engineering perspective, Banarjee, PHI, 2002.

Course Objective: This course introduces the basic concepts of mobile computing, N/W layers, communication systems, mobile and wireless devices, GSM – Architecture – Sessions –Protocols.

Course Outcomes:

CO-1: Introduce various wireless systems and standards and their basic operation cases.

CO-2: Learn to model radio signal propagation issues and analyze their impact on communication system performance.

CO-3: Understand how the various signal processing and coding techniques of GSM and its Architecture.

CO-4: Understand the techniques of radio spectrum allocation in multi-user systems and their impact on networks capacity.

CO- 5: To have a in depth knowledge about various wireless LAN technique.

CO-6: To Learn to simulate wireless networks and analyze the simulation results.

CO-7: To appreciate the contribution of Wireless Communication networks to overall technological growth.

CO-8: To understand the various terminology, principles, devices, schemes, concepts, algorithms and different methodologies used in Wireless Communication Networks.

CO-9: To provide the student with an understanding of advanced multiple access techniques

CO-10: To provide the student with an understanding of diversity reception techniques

Unit I INTRODUCTION

15

Mobile and Wireless Devices – Simplified Reference Model – Need for Mobile Computing –Wireless Transmissions –Multiplexing – Spread Spectrum and Cellular Systems- Medium Access Control – Comparisons.

Unit II TELECOMMUNICATION SYSTEMS

15

GSM – Architecture – Sessions –Protocols – Hand Over and Security – UMTS and IMT – 2000 – Satellite Systems.

Unit III WIRELESS LAN **15**

IEEE S02.11: System Architecture-Protocol Architecture, Physical Layer, 802.11b and 802.11a – Hiper LAN: WATM, BRAN, HYPERLAN2 – Bluetooth: User Scenarios, Architecture, Radio Layer, Base band Layer, Link Manager Protocol, L2CAP, Security, SDP – Security and Link Management

Unit IV MOBILE NETWORK LAYER **15**

Mobile IP – Goals – Packet Delivery – Strategies – Registration – Tunneling and Reverse Tunneling – Adhoc Networks – Routing Strategies.

Unit V MOBILE TRANSPORT LAYER **15**

Congestion Control – Implication of TCP Improvement – Mobility – Indirect – Snooping – Mobile – Transaction oriented TCP - TCP over wireless – Performance.

TOTAL: 75 Hours

Text Books:

1. Mobile Communications, J. Schiller, Pearson Education, Delhi, 2nd edition, 2003.
2. Principles of Mobile Computing, Hansmann, Merk, Nicklous, Stober, 2nd Edition, Springer(India), 2004.

Reference Books:

1. Principle of wireless Networks: A unified Approach, Pahlavan, Krishnamurthy, Pearson Education, Delhi, 2003.
2. Mobile and Wireless Design Essentials, Martyn Mallick, Wiley Dreamtech India Pvt. Ltd., New Delhi, 2004.
3. Wireless Communications and Networks, W. Stallings, 2nd Edition, Pearson Education, Delhi, 2004.

Course Objective: This course introduces the concepts of Windows Programming, the framework of Windows Programming, Project Utility, Pie-chart Application, MFC Design Considerations, Word Processor Applications, and ActiveX.

Course Outcomes:

CO-1: To understand the fundamentals of windows and development tools.

CO-2: To clarify resource information from windows fundamentals.

CO-3: To clarify the project utilities and how to apply pie chart for various data.

CO-4: To understand procedure oriented programming.

CO-5: To familiarize MFC design and MFC Library.

CO-6: To impart the knowledge about Fourier series application

CO-7: To know about the documents, views and OLE features.

CO-8: To understand container application and exception handling.

CO-9: To create a active X controls and customizing it.

CO-10: To understand dynamic HTML and principles of COM.

Unit I WINDOWS FUNDAMENTALS 15

Programming Concepts and Vocabulary for Windows – Windows Development Tools – Resource Information

Unit II APPLICATION FRAMEWORK 15

Project Utility – Writing Windows Programming (Procedure Oriented) – Pie-Chart Application

Unit III MFC LIBRARY 15

MFC Design Considerations – Key Features Of MFC Library – C Object – Simple Application And Template- Drawing In Client Area- Fourier Series Application With Resources- Bar Chart With Resources.

Unit IV GRAPH APPLICATIONS 15

Working With Document and Views-Word Processor Applications – OLE Features And Specifications - Container Application-Exception Handling-Exceptions And MFC.

Unit V ACTIVE X CONTROLS**15**

Create Simple Active X Controls With MFC – Customizing Controls – COM – DHTML- ATL Vs. Activex- Principles of COM & DCOM.

TOTAL: 75 Hours**Text Books:**

1. Core Visual C++ 6, L. Klander, First Indian reprint, Addison Wesley, 2000.
2. Windows programming made easy, Lafore, PHI, 2nd Edition, 2007.

Reference Books:

1. Visual C++ 6 (The Complete Reference), C.H.Pappas and W.H.Murray, Tata McGraw Hill, New Delhi, 1999.
2. Windows 98 Programming from the GroundUp, H. Schildt, Tata McGraw Hill, New Delhi, 1999.

Course Objective: This course gives an exposure to the Electronic Commerce concepts. It gives in depth knowledge about **electronic** commerce, its opportunities, Electronic Data Interchange, Secure Electronic Transaction.

Course Outcomes:

CO-1: To be well versed in Electronic Commerce Environment.

CO-2: To understand the basics of Electronic Data Interchange.

CO-3: To understand the secure commerce Requirements.

CO-4: To understand how the payments are transferred in a secured manner.

CO-5: To understand the need for the security of web servers.

CO-6: To understand the how the payments are purchase orders are processed.

CO-7: To understand the need for computer security and security tools.

CO-8: To understand the need for antivirus programs and security teams.

CO-9: To be well versed with business requirements and payment processing systems.

CO-10: To understand about different types of message handling systems over the internet.

Unit I ELECTRONICCOMMERCE AND OPPORTUNITIES BACKGROUND 15

The Electronic Commerce Environment – Electronic Marketplace Technologies – Modes of Electronic Commerce: Overview: Electronic Data Interchange.

Unit II APPROACHES TO SAFE ELECTRONIC COMMERCE 15

Overview – Secure Transport Protocols – Secure Transaction – Secure Electronic Payment Protocol (SEPP) – Secure Electronic Transaction (SET)

Unit III CERTIFICATES FOR AUTHENTICATION 15

Security on Web Servers – Payment Schemes: Internet Monetary Payment And Security Requirements- Payment And Purchase Order Process – Online Electronic Cash.

Unit IV INTERNET / INTRANET SECURITY ISSUES AND SOLUTIONS 15

The Need For Computer Security – Specific Intruder Approaches – Security Strategies-Security Tools – Encryption – Enterprise Networking And Access To The Internet Antivirus Programs.- Security Teams

Unit V MASTERCARD/VISA SECURE ELECTRONIC TRANSACTION 15

Introduction –Business Requirements – Concepts – Payment Processing. E-Mail And Secure E-Mail Technologies For Electronic Commerce: Introduction _ The Means Of Distribution – A Model For Message Handling- MIME, S/MIME, MOSS , MIME And Related Facilities For EDI Over The Internet.

TOTAL: 75 Hours

Text Books:

1. Web Commerce Technology Handbook, Daniel Minoli & Emma Minoli, Tata McGraw Hill, 1999.
2. Electronic Commerce Strategy, technologies and application, Whitley, Pearson Education, 2000.

Reference Books:

1. E-Commerce, K. Bajaj & D Nag, Tata McGraw Hill, 2nd Edition, 1999.
2. E-Commerce: An Indian Perspective, Joseph.P.T, 3rd edition, 2008.

15BCS110 NETWORK SECURITY AND CRYPTOGRAPHY 5004

Course Objective: This course introduces the basic concepts of security and cryptography, the various Encryption and Decryption algorithms.

Course Outcomes:

CO-1: To Provide students with a high- level understanding of how information security functions in an organization both business and technology- centric.

CO-2: To describe master information security governance, and related legal and regulatory issues and to master understanding external and internal threats to an organization,

CO-3: To be familiarity with information security awareness and a clear understanding of its importance and to be familiar with how threats to an organization are discovered, analyzed, and dealt with.

CO-4: To understand master fundamentals of secret and public cryptography and to master protocols for security services

CO-5: To be well known with network security threats and countermeasures and to design available secure solutions (such as PGP, SSL, IPSec, etc),

CO – 6: To be familiar with advanced security issues and technologies (such as DDoS attack detection and containment, and anonymous communications).

CO-7: To be exposed to original research in network security. Evaluate cryptographic primitives and their implementations for correctness, efficiency, and security.

CO –8 : To develop the importance of integrating people, processes and technology.

CO-9: To discuss how cryptography helps to achieve common security goals such as data secrecy, message integrity, non-repudiation and tasks.

CO-10: To describe and implement the specifics of some of the prominent techniques for public-key cryptosystems and digital signature schemes

Unit I INFORMATION SECURITY

15

History- Security As A Process, Not Point Products- Access. Attacks- Modification Attacks- Denial - Of- Service Attacks- Repudiation Attacksip-Spoofing- Malicious Code.

Unit II AVAILABILITY **15**

Accountability-Secret Key Encryption- DES-AES (Rijndael)- Number Theory – Prime Number – Modular Arithmetic – Euclid’s Algorithm - Fermat’s And Euler’s theorem – Discrete Logarithm - Public Key Encryption- Diffie- Hellman Keyexchange- Elliptic Curve Cryptography.

Unit III FIREWALLS **15**

Types Of Firewalls:Define And Types Of Firewalls-Develop A Firewall Configuration-Design A Firewall Rule Set –Intrusion Detection: Types-Set Up And IDS –Manage And IDS-Understand Intrusion Prevention.

Unit IV AUTHENTICATION **15**

Authentication Applications-Confidentiality And Integrity- IP Security-Web Security- GSM Security- Security UMTS 3G.

Unit V RFID BASICS **15**

Applications- Security Issues- Generation 2 Tags- Addressing RFID Privacy Concerns- Electronic Passports.

TOTAL: 75 Hours

Text Books:

1. Fundamentals of Network Security, Eric Maiwald ,Tata McGraw HillEdition, 2011.
2. Network Security and Cryptography, Bernard Menezes,Cengage Learning,India Edition, 2010.
- 3.Cryptography and Network Security, Behrouz A.Forouzan, Debdeep Mukhopadhyay, TataMcGraw Hill Second Edition, 2010.

Reference Books:

- 1.Wireless and Mobile Network Security, Pallapa Venkataram,Tata McGraw Hill Edition,2010.
- 2.Network Security,Terry Parode, Gordon Snyder, Cengage Learning, India Edition,2008.
3. Cryptography& Network Security,William Stallings,Pearson Education,4thEdition 2010.

Course Objective: This course introduces the basic concepts of Data Mining and Warehousing. It gives in depth knowledge of data modeling strategy, Data Mining Algorithms, Knowledge Discovery in databases and web mining.

Course Outcomes:

CO-1: To Learn basic of decision support systems and knowledge discovery, decision making.

CO-2: To understand basic data warehouse structure and to learn how to gather and analyze large sets of data to gain useful business understanding.

CO-3: Learn the concept of database technology evolutionary path which has led to the need for data mining and its applications.

CO-4: Examine the types of data to be mined and present a general classification of tasks and primitives to integrate a data mining system.

CO-5: Discover interesting patterns from large amounts of data to analyze and extract patterns to solve problems and make predictions of outcomes.

CO-6: Select and apply proper data mining algorithms to build analytical applications.

CO-7: Develop practical work of data mining techniques and design hypothesis based on the analysis to conceptualize a data mining solution to a practical problem.

CO-8: Design and implement of a data mining application using sample, realistic data sets and modern tools.

CO-9: To understand basic terms of data mining and algorithms to apply for real world business peoples.

CO-10: Design a effective web page by applying web mining.

Unit I NEED FOR STRATEGIC INFORMATION

15

Decision Support System, Knowledge Discovery & Decision Making, Need For Data Warehouse, Definitions Of Data Warehousing And Data Mining, Common Characteristics Of Data Warehouse, Data Marts, Metadata, Operational Versus Analytical Databases, Trends And Planning Of Data Warehousing.

Unit II DEFINING BUSINESS REQUIREMENTS 15

Data Modeling Strategy, Fact Tables, Dimensions, Star Schema And Other Schemas, Multi-Dimensional Data Models, Data Cube Presentation Of Fact Tables, Using The Data Warehouse, Designing Tools For Data Warehouse, OLAP Models And Operations.

Unit III ARCHITECTURAL COMPONENTS, INFRASTRUCTURE 15

Operational & Physical, Extraction, Transformation And Loading, Components Of An Oracle Data Warehouse, Data Transformation Functions, DBA Responsibilities, Capacity Planning.

Unit IV IMPLEMENTATION OF DATA WAREHOUSE, PHYSICAL DESIGN 15

Steps, Considerations, Physical Storage, Indexing, Performance Optimization, Data Warehouse Deployment Activities, Data Security, Backup And Recovery Concepts, Data Warehouse Maintenance.

Unit V BASICS OF DATA MINING 15

Related Concepts, Data Mining Techniques, Data Mining Algorithms- Classification, Clustering, And Association Rules, Knowledge Discovery In Databases(KDD) Process, Introduction To Web Mining.

TOTAL: 75 Hours

Text Books:

1. Data Warehousing Fundamentals, by Paulraj Ponnian, John Wiley& Sons, 2001.
2. Data warehousing with oracle by sima yazdani – shirley s. Wong

Reference Books:

- 1.Data Mining Concepts and Techniques, Han Kamber, Jiawei, 3rd edition, 2012.
- 2.Data Mining:A Tutorial based primer,Roiger, Richard.J, 2003.

Course Objective: This course introduces the fundamental concepts of cloud computing model for enabling ubiquitous, convenient access to shared pool of configurable computing resources and storage solutions over a network.

Course Outcomes:

CO-1: Ability to understand architecture and concepts of different cloud models.

CO-2: Capable of creating applications by utilizing cloud platforms.

CO-3: Understanding the key dimensions of the challenges of cloud computing.

CO-4: Ability to assess own organization's needs for capacity building and training in cloud related IT areas.

CO-5: Attempt to generate new ideas and innovations in cloud computing.

CO-6: Ability to choose the appropriate technologies and approaches for the related issues to cloud computing.

CO-7: Understand how to provide the appropriate cloud computing solutions and recommendations according to the applications used.

CO-8: Explore cloud computing driven commercial systems such as Google Apps and Microsoft Azure.

CO-9: To build private cloud.

CO-10: Broadly educate with the impact of engineering on legal and societal issues involved.

Unit I CLOUD COMPUTING

15

History of Cloud Computing – Cloud Architecture – Cloud Storage – Why Cloud Computing Matters – Advantages of Cloud Computing – Disadvantages of Cloud Computing – Companies in the Cloud Today – Cloud Services

Unit II WEB-BASED APPLICATION

15

Pros and Cons of Cloud Service Development – Types of Cloud Service Development – Software as a Service – Platform as a Service – Web Services – On-Demand Computing – Discovering Cloud Services Development Services and Tools – Amazon Ec2 – Google App Engine – IBM Clouds

Unit III CENTRALIZING EMAIL COMMUNICATIONS**15**

Collaborating on Schedules – Collaborating on To-Do Lists – Collaborating Contact Lists – Cloud Computing for the Community – Collaborating on Group Projects and Events for the Corporation

Unit IV COLLABORATING ON CALENDARS SCHEDULES AND TASKMANAGEMENT 15

Exploring Online Scheduling Applications –Exploring Online Planning and Task Management – Collaborating on Event Management – Collaborating on Contact Management – Collaborating on Project Management – Collaborating on Word Processing - Collaborating on Databases– Storing and Sharing Files

Unit V COLLABORATING VIA WEB-BASED COMMUNICATION TOOLS 15

Evaluating Web Mail Services – Evaluating Web Conference Tools – Collaborating via Social Networks and Groupware – Collaborating via Blogs and Wikis

TOTAL: 75 Hours**Text Books:**

- 1.Cloud Computing: Web-Based Applications That Change the Way You Work and Collaborate Online, Michael Miller , Queue Publishing, August 2008.
2. Cloud Computing Best Practices for Managing and Measuring Processes for On-demand Computing, Applications and Data Centers in the Cloud with SLAs, Haley Beard, Emereo Pty Limited, July 2008.

Reference Books:

1. Cloud computing a practical approach 2010, velete, Antony. T, TMH, 4th Edition, 2007.
2. Cloud computing with Windows Azure platform, Jennings, Roger, PHI, 2009.

Course Objective: This course introduces the basic concepts of software testing, types of testing and the levels of testing.

Course Outcomes:

CO-1: To study fundamental concepts in software testing, including software testing objectives, process, criteria, strategies, and methods.

CO-2: Have an ability to apply software testing knowledge and engineering methods.

CO-3: To apply a wide variety of testing techniques in an effective and efficient manner.

CO-4: Have an ability to design and conduct a software test process for a software testing project.

CO-5: Have an ability to use various communication methods and skills to communicate with their teammates to conduct their practice-oriented software testing projects.

CO-6: Have an ability to use software testing methods and modern software testing tools for their testing projects.

CO-7: Have an ability understand and identify various software testing problems, and solve these problems by designing and selecting software test models, criteria, strategies, and methods.

CO-8: Able to conduct tests at various levels to check the flow of data and control, and to check the code after integrating.

CO-9: Able to understand quality of software at thread levels by identifying faults.

CO-10: Able to plan and monitor the development of software systematically using software specification and design document.

Unit I INTRODUCTION TO QUALITY

15

Software quality, fundamentals of software testing, VV model of testing-Phases of Software project-Planning, design, development of coding, testing, development and maintenance-Testing and Deployment and maintenance.

Unit II FUNCTIONAL TESTING **15**

Boundary value Testing, Equivalence class testing, Decision Table based testing, Retrospection-Types of Testing-White Box-Black Box-Integration-System and Acceptance-Performance and Regression.

Unit III STRUCTURAL TESTING **15**

Path Testing: Basics, Loops-Predicates, Path Predicates-Path Sensitizing-Implementation And Application. Data Flow Testing: Basics-Data Flow Testing Strategies-Applications-Tools-Effectiveness- Retrospection.

Unit IV LEVELS OF TESTING **15**

Integration Testing, System Testing, Interaction Testing. Object Oriented Testing : Issues, Class Testing, Object Oriented Integration Testing, Object Oriented System Testing.

Unit V TESTING PROCESS **15**

Planning, Metrics: Types-Project Metrics-Progress Metrics-Productivity Metrics And Reports, Quantitative And Qualitative Analysis, Improvements.

TOTAL: 75 Hours

Text Books:

1. Software Testing Principles, Techniques and Tools, M.G. Limaye , TMH.
2. Software Testing A Craftman's Approach, Paul C. Jorgensen, CRC Press, II Edition.

Reference Books:

1. Software Testing tools, Prasad, K.V.K.K, TMH, 2009
2. Software testing in the real world: Improving the process, Kit, Edward, PHI, 1995

15BCS114 MANAGEMENT INFORMATION SYSTEM 5 0 0 4

Course Objective: This course introduces the basic concepts of information system, Basics of computers, Software Development Life Cycle.

Course Outcomes:

CO-1: To understand MIS and its support for organization.

CO-2: To clarify the structure of MIS and provide information for decision making

CO-3: To understand system concepts and classification.

CO-4: To know the categories of system and competitive advantage.

CO-5: To aware of computers and their peripheral devices.

CO-6: To understand online processing and Data Base Management System

CO-7: To clarify the role of system analyst and functional information system.

CO-8: To illuminate how the information system used in production and material marketing

CO-9: To know about Decision support system and executive information system

CO-10: To know the portals which provide decision support and knowledge about business process out sourcing.

Unit I MANAGEMENT INFORMATION SYSTEM 15

Definition of Management Information System – MIS Support For Planning, Organizing And Controlling –Structure Of MIS –Information For Decision –Making.

Unit II SYSTEM 15

Concept of System – Characteristics of System – System Classification – Categories Of Information Systems – Strategic Information System And Competitive Advantage.

Unit III COMPUTERS AND INFORMATION PROCESSING 15

Classification Of Computers- Input Devices –Output Devices – Storage Devices - Batch And Online Processing-Hardware – Software .Database Management Systems

Unit IV SYSTEM ANALYSIS AND DESIGN**15**

SDLC – Role Of System Analyst – Functional Information System – Personnel, Production, Material Marketing.

Unit V DECISION SUPPORT SYSTEM**15**

Definition. Group Decision Support System-Decision Support Trends-Management Information Systems- Online Analytical Processing-Executive Information Systems- Enterprise Portals And Decision Support-Knowledge Management Systems–Business Process Outsourcing –Definition And Function.

TOTAL: 75 Hours**Text Books:**

1. Management Information System, Dr. S. P. Rajagopalan
2. Management Information System, Prentice, Hall of India, Mudick & Ross.
3. Management Information System,,Gordan B.Davis.

Reference Books:

1. Information systems Analysis and Design,Jame A.Senn.
2. Management Information System, Prentice , Hall of India ,Sadagopan.
3. Management Information System”, CSV Murthy , Himalaya publications

15BCS115 OBJECT ORIENTED ANALYSIS & DESIGN 5004

Course Objective: This course introduces the basic concepts of Object Oriented Analysis and Design, components of OOAD and testing in OOAD and also introduces the quality assurance tests.

Course Outcomes:

CO-1: Understand the fundamental aspects of object oriented analysis and design, in terms of “how to use” it for the purpose of specifying and developing software.

CO-2: Explore and analyze different analysis and design models, such as OO Models, Structured Analysis and Design Models, etc.

CO-3: Understanding the insight and knowledge into analyzing and designing software using different object-oriented modeling techniques.

CO-4: To apply Object Oriented Analysis Processes for projects and design GUI prototypes for software applications.

CO-5: Design databases to support the software applications and document them using UML diagrams like class diagrams, sequence diagrams, use case diagrams, activity diagrams etc.

CO-6: Develop an appreciation for and understanding of the risks inherent to large-scale software development.

CO-7: Develop an understanding of the application of OOAD practices from a software project management perspective

CO-8: Ability to analyze, design and construct complicated software applications to industry standards.

CO-9: Ability to learn test plan, test cases, continuous testing and debugging principles with real time scenarios.

CO-10: Identify current industry standards for information system development using CASE tools.

Unit I SYSTEM DEVELOPMENT

15

Object Basics - Development Life Cycle –Software Development Process-Building High Quality Software-Methodologies - Patterns –Pattern Templates-Anti Patterns-Capturing Patterns-Frameworks - Unified Approach – UML-UML Diagram-Class Diagram-Usecase Diagram.

Unit II OBJECT ANALYSIS **15**

Object Analysis: Classification Theory-Noun Phrase Approach-Common Class Patterns Approach- Use-Case Models - Object Relations - Attributes - Methods - Class And Object Responsibilities - Case Studies.

Unit III DESIGN PROCESSES **15**

Design Axioms: Design Pattern–Design Classes-Object Oriented Design-Refining Attributes-Designing Methods And Protocols- Object Storage - Object Interoperability - Case Studies.

Unit IV USER INTERFACE DESIGN **15**

View Layer: Design-Macro Level Process-Micro Level Process-Purpose-Prototypes-View Layer Classes - View Layer Interface - Case Studies.

Unit V QUALITY ASSURANCE TESTS **15**

Testing Strategies - Object Orientation On Testing - Test Cases - Test Plans - Continuous Testing - Debugging Principles - System Usability - Measuring User Satisfaction - Case Studies.

TOTAL: 75 Hours

Text Books:

1. Object Oriented Systems Development, Second Edition,Tata McGraw Hill, International Edition, 1999.
2. G. Booch, Object Oriented Analysis and design, , Addison Wesley, Boston,2nd Edition 1999.

Reference Books:

1. Software EngineeringR.S.Pressman, Tata McGraw Hill, New Delhi, 6th Edition,2005.
2. Object Oriented Modeling And design, Rumbaugh, Blaha, Premerlan , Eddy Lorensen, Pearson education, Delhi, 2003.

Course Objective: This course introduces the basic concepts of Software Quality Control and Assurance, Management Responsibility, Statistical Techniques, Process Modeling, Data Flow Graph, Internal Quality Audits.

Course Outcomes:

CO-1: Understanding the system quality and standards by learning the software tasks, management Responsibility and Purchasing Product Traceability.

CO-2: Quality system can be developed with the knowledge about managerial responsibilities, Quality System, Contract Review, Design Control and Document Control.

CO-3: Software quality can be built with proper knowledge of organizing software management with the help of software quality program.

CO-4: Learning principles of software defect prevention method which helps the student to avoid obstacles in building quality software.

CO-5: Learning some metrics like customer problem, customer satisfaction, Lines of codes helps in designing quality software product.

CO-6: Learning analyzing strategy for software quality metrics and quality management strategy helps in acquiring knowledge for developing a quality system.

CO-7: Quality program can be built with knowledge of establishing the quality program, assurance planning, purpose and scope.

CO-8: Establishment of software quality program with Standard and Goals, planning and testing the program helps in improving the quality.

CO-9: Understanding the standards and models of software helps in gathering ideas about role of software quality assurance development.

CO-10: Comparative study of SEI CMM Level 5 model and ISO9000 Model helps in acquiring the basic knowledge about standardization and models.

Unit I INTRODUCTION

15

Quality And The Quality System - Standards And Procedures Technical Activities. Software Tasks - Management Responsibility - Quality System - Contract Review - Design Control - Document Control - Purchasing Product Identification and Traceability.

Unit II PROCESS CONTROL **15**

Checking - Identification Of Testing Tools - Control Of Nonconforming Product - Corrective Action-Verification:Verification techniques – Inspections, reviews, walk-throughs – Case studies.

Unit III QUALITY AUDITS **15**

Handling, Storage, Packing And Delivery - Quality Records - Internal Quality Audits - Training - Servicing - Statistical Techniques-Views On Quality – Cost Of Quality - Quality Models – Quality Frameworks – Verification And Validation – Defect Taxonomy – Defect Management – Statistics And Measurements – IEEE Standards – Quality Assurance And Control Processes

Unit IV QUALITY ASSURANCE TECHNOLOGIES **15**

QA And New Technologies - QA and Human - Computer interface - Process Modeling - Standards And Procedures-Coverages: Block, Conditions, Multiple Conditions, MC/DC, Path – Data Flow Graph – Definition And Use Coverages – C-Use, P-Use, Defclear, Def-Use – Finite State Machines – Transition Coverage

Unit V INDIAN STANDARDS **15**

ISO –ISO Standards-Development Process-ISO Certification-ISO Consulting Services And Consultants-E-Business- 9001 - Elements Of ISO 9001 - Improving Quality System - Case Study.

TOTAL: 75 Hours

Text Books:

1. Managing the software process, Watts S. Humphrey, Addison Wesley, 1999.
2. Software Quality Assurance a Practical Approach, Tsum S.Chow,IEEE ComputerSociety press, 1985.

Reference Books:

1. Software Engineering, Richard E. Fairley, A Practitioner's approach, McGraw Hill, 1982.
2. Software quality Assurance from theory to implementation, Daniel Galin, Pearson Education, 2nd Edition, 2004

Course Objective: This course introduces the basic concepts of Database Management System, the Structured Query Language (SQL) and PLSQL, Forms, Reports, Data Clustering and Partitioning and Database Administration.

Course Outcomes:

CO-1: To Understand the basics of Database concepts and Structures.

CO-2: To Understand the objectives of data and information management.

CO-3: Construct and normalize conceptual data models

CO-4: Understand data modeling and database development process.

CO-5: Become proficient in using database query language, i.e., SQL.

CO-6: Implement a relational database into a database management system.

CO-7: Understand the concept of Forms and Reports.

CO-8: To understand the power of Application Structure.

CO-9: Ability to understand database administration, development stages, Application types.

CO-10: Understand the issues related to database performance

Unit I INTRODUCTION

15

Advantages and Components of a Database Management Systems - Feasibility Study - Class Diagrams - Data Types - Events - Normal Forms - Integrity - Converting Class Diagrams to Normalized Tables - Data Dictionary.

Unit II QUERY BASICS

15

Computation Using Queries - SubTOTALs and GROUP BY Command - Queries with Multiple Tables Subqueries - Joins - DDL & DML - Testing Queries.

Unit III FORMS AND REPORTS

15

Effective Design of Forms and Reports - Form Layout - Creating Forms - Graphical Objects - Reports -- Procedural Languages - Data on Forms - Programs to Retrieve and Save Data - Error Handling.

Unit IV APPLICATION STRUCTURE**15**

Power of Application Structure - User Interface Features - Transaction -- Forms Events - Custom Reports - Distributing Application - Table Operations - Data Storage Methods - Storing Data Columns - Data Clustering and Partitioning.

Unit V DISTRIBUTED DATABASE**15**

Database Administration - Development Stages - Application Types - Backup and Recovery - Security and Privacy - Distributed Databases - Client/Server Databases - Web as a Client/Server System - Objects - Object Oriented Databases - Integrated Applications.

TOTAL: 75 Hours**Text Books:**

1. Database Management Systems Designing and Building Business Application , G. V. Post , McGraw Hill International edition - 1999.
2. Database Management System Concepts, Silberschatz, TMH, 5th Edition, 2006.

References Books:

1. Database Management Systems, Raghu Ramakrishnan, WCB/McGraw Hill , 1998.
2. An Introduction to Database Systems,C.J. Date, 7th Edition- Addison Wesley, 2000.

Course Objective: This course introduces the basic concepts of Software Engineering, the phases of Software Development Life Cycle, the metrics of Software projects, Software Cost Estimation Techniques and quality assurance.

Course Outcomes:

CO-1: Identify, formulate, analyze, and solve problems, as well as identify the computing requirements appropriate to their solutions.

CO-2: Ability to Learn Software Requirement Specifications

CO-3: Learn to design software and apply strategies of project management

CO-4: Apply rapid software development methods and decide on appropriate software architecture.

CO-5: To study and practice methods for analysis, design, testing, and implementation of large, complex software systems

CO-6: Design, implement, and evaluate software-based systems, or programs of varying complexity that meet desired needs, satisfy realistic constraints, and demonstrate accepted design and development principles.

CO-7: To study the various perspectives on software quality and change management

CO-8: Use current techniques, skills, and tools necessary for professional practice.

CO-9: Understand ability to engage in life-long maintenance and continuing Software development.

CO-10: Think critically about ethical and social issues in software engineering for different applications.

Unit I INTRODUCTION TO SOFTWARE ENGINEERING

15

Definitions - Size Factors - Quality And Productivity Factors - Managerial Issues – Planning A Software Project: Defining The Problem - Developing A Solution Strategy - Planning The Development Process - Planning An Organization Structure - Other Planning Activities.

Unit II SOFTWARE COST ESTIMATION

15

Software Cost Factors - Software Cost Estimation Techniques - Staffing-Level Estimation - Estimating Software Maintenance Costs - The Software Requirements

Specification - Formal Specification Techniques - Languages And Processors For Requirements Specification.

Unit III SOFTWARE DESIGN 15

Fundamental Design Concepts - Modules And Modularization Criteria - Design Notations - Design Techniques - Detailed Design Considerations - Real-Time And Distributed System Design - Test Plans - Milestones, Walkthroughs, And Inspections.

Unit IV IMPLEMENTATION ISSUES 15

Structured Coding Techniques - Coding Style - Standards And Guidelines - Documentation Guidelines -Type Checking - Scoping Rules - Concurrency Mechanisms.

Unit V QUALITY ASSURANCE 15

Walkthroughs And Inspections - Static Analysis - Symbolic Execution - Unit Testing And Debugging - System Testing - Formal Verification: Enhancing Maintainability During Development - Managerial Aspects Of Software Maintenance - Source Code Metrics - Other Maintenance Tools And Techniques.

TOTAL: 75 Hours

Text Books:

1. Software Engineering Concepts, R.Fairley, Tata McGraw-Hill Edition. 1997.
2. Software Engineering, R.SPressman, McGraw Hill, Fourth Ed, 1997.

Reference Books:

1. Software Engineering fundamentals, Behforooz, Hudson, PHI, 2nd edition, 1996.
2. Software Project Management, Hughes, Bob, TMH, 4th Edition, 2006.

15BCS119 DATA COMMUNICATION & NETWORKING 5 0 0 4

Course Objective: This course introduces the basic concepts of Data Communication & Networking, OSI Model, Layers of OSI Model, Parallel and serial transmission, Analog and digital network.

Course Outcomes:

CO-1: Understand the fundamental concepts of data communications and networking and able to intelligently compare and contrast local area networks and wide area networks in terms of characteristics and functionalities.

CO-2: Understand the purpose of network layered models, network communication using the layered concept, and able to compare and contrast Open System Interconnect (OSI) and the Internet Model.

CO-3: Analyze the various types of transmission media and services of DTE/DCE interface standards.

CO-4: Show clear and unambiguous understanding of analog transmission of digital and analog data, methods, and the procedures involved in converting digital data and analog low-pass to band-pass analog signals (Modulation – ASK, FSK, PSK, AM, FM, PM). Recognize the advantages and limitations of modulation systems.

CO-5: Can effectively discuss that bandwidth utilization in TDM, FDM, and WDM.

CO-6: Compare and contrast cyclic redundancy check and checksum in terms of implementation and performance.

CO-7: Understand the basic difference between data logical link control and media access control and realize the features of SMDS, switching techniques, ISDN, and ATM.

CO-8: Understand connecting LAN's, backbone networks, and virtual LAN's. Students should understand operations of bridges and the spanning tree algorithm, Repeaters, Bridges, and Gateways.

CO-9: Design, calculate, and apply subnet masks and addresses to fulfill networking requirements.

CO-10: Analyze the features and operations of various application layer protocols such as Http, DNS, and SMTP.

Unit I INTRODUCTION TO DATA COMMUNICATION **15**

Network, Protocols & standards and standards organizations - Line Configuration - Topology - Transmission mode - Classification of Network - OSI Model - Layers of OSI Model.

Unit II PARALLEL AND SERIAL TRANSMISSION **15**

DTE/DCE/Such As EIA-449, EIA-530, EIA-202 And X.21 Interface - Interface Standards - Modems - Guided Media - Unguided Media - Performance - Types Of Error - Error Detection - Error Corrections.

Unit III MULTIPLEXING **15**

Types Of Multiplexing - Multiplexing Application - Telephone System - Project 802 - Ethernet Token Bus - Token Ring - FDDI - IEEE 802.6 - SMUS - Circuit Switching - Packet Switching - Message Switching - Connection Oriented And Connectionless Services.

Unit IV ANALOG AND DIGITAL NETWORK **15**

History-Access To Isdn:Services-History-Subscriber Access To The Isdn- Isdn Layers - Broadband Isdn - X.25 Layers - Packet Layer Protocol – Atm:Designing Goals- Atm Architecture-Switching-Switching Fabrics-Atm Layers-Atm Applications- Atm Topology - Atm Protocol.

Unit V REPEATERS **15**

Bridges - Routers - Gateway - Routing Algorithms - TCP/IP Network-Network Layers-Addressing-Subnetting- Transport-UDP – TCP- Applications Layers-DNS-SNMP-HTTP And URL-Application Layers Of TCP/IP - World Wide Web.

TOTAL: 75 Hours

Text Books:

1. Introduction to Data Communication and Networking, Behrouz and Forouzan, 2nd Edition – TMH , 2001.
2. Computer Network, Tanenbaum, TMH, 5th Edition, 2007.

Reference Books:

1. Communication Networks (A first Course), Jean Wairand, WCB/ McGraw Hill, Second Edition , 1998.
- 2.Data and Computer communications, Stallings, Williams, PHI, 8th Edition, 2007.

Course Objective: This course introduces the basic concepts of JAVA Programming and Classes, OOPS Concepts, Packages, Inheritance, Network Basics, Inner Classes, Interfaces, Exception Handling, Overriding, Datagrams, URL, Socket Programming and AWT Controls.

Course Outcomes:

CO-1: To apply the concepts of oops such as Abstraction, Encapsulation, Inheritance and Polymorphism to applying the Architectural designing and buildings.

CO-2: To get the ability of doing simple programs such as to finding prime number, odd numbers, positive numbers and arithmetic calculation.

CO-3: To know thoroughly how to build a wireless telephony application by using Constructors and Inheritance features.

CO-4: To implement pattern matching concepts using String Class and Methods used in searching of character scenario.

CO-5: To gain insight of importing Packages and using Interfaces in developing a real time application of Railway Reservation etc.,

CO-6: To develop java classes can capable to handle Threads, Deadlocks and handling the errors using Exceptions.

CO-7: To gush out the ideas of File I/O Stream classes and specifically understands utility Packages.

CO-8: Use the Applet Classes to support GUI components.

CO-9: To handle security and Network implementation in java.

CO-10: To develop simple java programs using AWT Classes and its Components.

Unit I INTRODUCTION TO JAVA

15

Features of Java - Object Oriented Concepts - Lexical Issues - Data Types - Variables - Arrays - Operators - Control Statements.

Unit II CLASSES AND OBJECTS

15

Constructors - Overloading method - Access Control - Static and fixed methods - Inner Classes - String Class - Inheritance - Overriding methods - Using super- Abstract class.

Unit III PACKAGES**15**

Access Protection - Importing Packages - Interfaces - Exception Handling - Throw and Throws - Thread - Synchronization - Messaging - Runnable Interface - Inter thread Communication - Deadlock - Suspending, Resuming and stopping threads - Multithreading.

Unit IV I/O STREAMS**15**

File Streams - Applets - String Objects - String Buffer - Char Array - Java Utilities - Code Documentation.

Unit V NETWORKS BASICS**15**

Socket Programming - Proxy Servers - TCP/IP Sockets - Net Address - URL - Datagrams - Working with windows using AWT Classes - AWT Controls - Layout Managers and Menus.

TOTAL: 75 Hours**Text Books:**

1. Core Java 2 Volume I, Gary Cornell Cay S. Horstmann, Fundamentals, 5th Edn. PHI, 2000.
2. Java2 (The Complete Reference) , P. Naughton and H. Schildt , Third Edition, TMH 1999.

Reference Books:

1. The Java Programming Language, K. Arnold and J. Gosling, Second Edition, Addison Wesley, 1996.
2. Java Elements: Principles of Programming in Java, Bailey, 2nd Edition, TMH, 2000.

Syllabus

Generic Elective Courses

Course Objective: To build web applications using HTML and client side script technologies use with Microsoft's IIS. To build web applications with style sheets and Data object in order to provide secure web design.

Course Outcomes:

CO-1: Apply the knowledge of the internet concepts in understanding the web application development.

CO-2: Understand, analyze and apply the role of markup languages like HTML, DHTML, and XML in the working of the web and web applications.

CO-3: Use knowledge of HTML and CSS code and an HTML editor to create personal and/or business websites following current professional and/or industry standards.

CO-4: Ability to create JavaScript programs that apply new programming skills to model real-world problems.

CO-5: Ability to learn real-world web application using JavaScript to create dynamic, interactive web applications.

CO-6: Understand the basic structure and function of the Object in JavaScript and to recognize the different object methods to use in a given scenario.

CO-7: Understand, analyze and build dynamic web pages using client side programming like VBScript and JavaScript and also develop the web application using ASP.NET and JSP.

CO-8: Create web-based distributed applications using C#, ASP.NET, SQL Server and ADO.NET

CO-9: Justify the ethical and security issues in information systems management.

CO-10: Understanding the impact of web designing in the current market place where everyone use to prefer electronic medium for shopping, commerce, fund transfer and even social life also.

Unit I INTRODUCTION

10

Internet Basic - Introduction To HTML - List - Creating Table - Linking Document Frames - Graphics To HTML Doc - Style Sheet - Style Sheet Basic - Add Style To Document - Creating Style Sheet Rules - Style Sheet Properties - Font - Text - List - Color And Background Color - Box - Display Properties.

Unit II JAVASCRIPT FUNDAMENTALS **10**

Introduction To Javascript - Advantage Of Javascript Javascript Syntax - Datatype - Variable - Array - Operator And Expression - Looping Constructor - Function - Dialog Box.

Unit III OBJECTS IN JAVASCRIPT **10**

Javascript Document Object Model - Introduction - Object In HTML - Event Handling - Window Object - Document Object - Browser Object - Form Object - Navigator Object Screen Object - Build In Object - User Defined Object - Cookies.

Unit IV ASP.NET FUNDAMENTALS **12**

Asp. Net Language Structure - Page Structure - Page Event, Properties & Compiler Directives. Html Server Controls - Anchor, Tables, Forms, Files. Basic Web Server Controls- L.Able, Textbox, Button, Image, Links, Check & Radio Button, Hyperlink. Data List Web Server Controls - Check Box List, Radio Button List, Drop Down List, List Box, Data Grid, Repeater.

Unit V NETWORK & SECURITY **12**

Request And Response Objects, Cookies, Working With Data - OLEDB Connection Class, Command Class, Transaction Class, Data Adaptor Class, Data Set Class. Advanced Issues - Email, Application Issues, Working With IIS And Page Directives , Error Handling. Security - Authentication, IP Address, Secure By SSL & Client Certificates.

TOTAL: 54 Hours

Text Books:

1. Web Enable Commercial Application Development Using HTML, DHTML, Javascript, P I. Bayross, en CGI, BPB Publications, 2000.
2. ASP 3 Programming Bible, Eric A. Smith, Wiley-Dreamtech India (P) Ltd, 2003.

Reference Books:

1. ASP3.0 Beginners Guide, Dave Mercer, TataMcGraw-Hill Edition, Sixth reprint, 2004.
2. Mastering Javascript, J. Jaworski BPB Publications, 1999.
3. Complete Reference HTML (Third Edition), T. A. Powell , TMH, 2002.

Course Objective: This course gives introduction to the concepts of ASP, VB Script and Java Script, Working with ASP.NET to enhance communication and security and to develop web page.

Course Outcomes:

CO-1: Use operators, variables, arrays, control structures, functions and objects in JavaScript.

CO-2: Identify popular JavaScript Libraries.

CO-3: Understanding programming concepts

CO-4: Ability to work with the functions of JavaScript

CO-5: Apply JavaScript best practices

CO-6: Use the DOM / Interactivity with elements

CO-7: Understand, analyze and apply the role of languages like HTML, Javascript, VBScript and protocols in the workings of the web and web applications

CO-8: Analyze a web page and identify its elements and attributes.

CO-9: Create web pages using HTML.

CO-10: Create web pages using JavaScript

Unit I INTRODUCTION

10

Introduction To` Vbscript - Adding Vbscript Code To An Html Page - Vb Script Basics - Vbscript Data Types - Vbscript Variables - Vbscript Constants -Vbscript Operators – Mathematical- Comparison-Logical - Using Conditional Statements - Looping Through Code - Vbscript Procedures – Type Casting Variables - Math Functions – Date Functions – String Functions – Other Functions - Vbscript Coding Conventions - Dictionary Object In Vbscript - Err Object.

Unit II JAVA SCRIPT

10

Introduction To Javascript – Advantages Of Javascript – Javascript Syntax - Data Type –Variable - Array – Operator &Expression – Looping – Control Structures - Constructor Function – User Defined Function Dialog Box .

Unit III OBJECT MODEL**10**

Javascript Document Object Model – Introduction – Object In HTML – Event Handling – Window Object – Document Object – Browser Object – Form Object – Navigator Object – Screen Object – Build In Object – User Defined Object – Cookies.

Unit IV ASP.NET**12**

ASP.NET Language Structure – Page Structure – Page Event , Properties & Compiler Directives . HTML Server Controls – Anchor, Tables, Forms, Files . Basic Web Server Controls – Label, Text Box, Button, Image Links, Check & Radio Button, Hyperlink, Data List Web Server Controls – Check Box List. Radio Button List, Drop Down List, List Box, Data Grid, Repeater.

Unit V SECURITY**12**

Request And Response Objects, Cookies, Working With Data – OLEDB Connection Class, Command Class, Transaction Class, Data Adaptor Class, Data Set Class. Advanced Issues – Email, Application Issues, Working With IIS And Page Directives, Error Handling. Security – Authentication, IP Address, Secure By SSL & Client Certificates.

TOTAL: 54Hours**Text Books:**

1. Web Enable Commercial Application Development Using HTML,DHTML,Javascript, I.Bayross ,Perl CGI, BPB Publications,2000.
2. Mastering Active Server Pages 3, A.Russell Jones , BPB Publications.

Reference Books:

1. Internet Programming with VBScript and JavaScript, Hathleen Kalata, Thomson Learning
2. XML Harness the Power of XML in easy steps, Mike McGrath , Dreamtech Publications
3. Complete Reference HTML ,T.A. Powell, TMH,2002.
4. Mastering Javascript, J.Jaworski, BPB Publications,1999.

Course Objective: To understand the fundamentals of Photoshop & can able to retouch & repair, Work with multiple layers, Slice & clone, Design basic web templates, and create animations.

Course Outcomes:

CO-1: Ability to make color corrections.

CO-2: Manage assets by using the tools available in Adobe Photoshop.

CO-3: Ability to convert black and white photo to color photo

CO-4: Understanding the approach of color corrections.

CO-5: Ability to use basic selection tools and edge refinement to isolate and edit parts of an image.

CO-6: Gain competency in creating composite images that demonstrate advanced selection and layering techniques.

CO-7: Improved working knowledge on adjustment layers in image coloration and exposure.

CO-8: Ability to create stylish image by combining filters with blending and masks.

CO-9: Gain knowledge to evaluate and correct image imperfections using the Info panel.

CO-10: Ability to print with variety of techniques and papers

Unit I BASICS OF ADOBE PHOTOSHOP 10

Learn The Tools And What They Do-- Basic Workflow- Creating Effective Storing- Batch Renaming- How To Save Your Photos- Digital Asset Management- File Types- File Sizes- Color Types.

Unit II LAYERS 10

Layer Styles-Layers Palette-Working With Layers-New Layersvia Cut-New Layers Via Copy- Hiding/Showing Layers-Repositioning Layers-Flattening Images-Working With Adjustment Layers-Layer Effects-Opacity- Adjustment Layers.

Unit III BASIC RETOUCHING 10

Color Manipulations- Levels- Curves- Seeing Color Accurately- Patch Tool- Cropping- Reading Your Palettes- Dust And Scratches.

Unit IV ADVANCED RETOUCHING**12**

Smoothing Skin-Strategy for Retouching-Resolution and Image Size-Cropping and Image-Adjusting the tonal image-Removing a Color Cast- Smoothing Wrinkles-Special Color Effects: Black And White, Sepia, Grainy.

Unit V WORKING WITH A LOT OF IMAGES**12**

Cataloging Your Images- Editing Our Photoshoot- Naming Your Shoot-Automating Your Shoot- Batch Processing- Introduction to Action.

TOTAL: 54Hours**Text Books:**

1. Fundamental Photoshop, Greenberg, Tata McGraw- Hill, 1995
2. Photoshop 7, The Ultimate Reference, Laurie Ann Ulrich, Dream Tech Press, 2002

Reference Books:

1. Photoshop CS2 in Simple Steps, Shalini Gupta, Adity Gupta, Dreamtech Press, 2006.
2. Adobe Photoshop CS6 Bible, Lisa Danae Dayley, Brad Dayley, Wiley India, 2012.

Course Objective: This course provides hands-on experience with Adobe Flash, a Web-authoring and animation tool. Students gain understanding of fundamental Flash paradigms (Stage, Symbols, Library, Timeline) and Create simple, tasteful animation effects . Students ue Buttons and ActionScript to enable basic user interaction.

Course Outcomes:

CO-1: To work with the basic library functions and editing tools.

CO-2: To be able to blend colors and to work with droppers and paint buckets.

CO-3: To be able to work with different text fields.

CO-4: To work with modifying the shapes with the help of menu commands.

CO-5: To understand the basic rules of defining variables in creating the personalities and illusions.

CO-6: To create animations with the help of copy motion commands.

CO-7: To be able to work with filters and to give effects to the animations.

CO-8: To work with masking of layers and to distribute various effects in to the layers.

CO-9: To be able to work with large sized files and applying sound effects in the files.

CO-10: To be able to create a small animation with the sound effects.

Unit I SYMBOLS, INSTANCES, AND THE LIBRARY

10

Understanding the Document Library - Defining Content Types- Editing Symbols- Modifying Instance Properties -Slice Scaling for MovieClip Backgrounds - Color Basics - Working in the Swatches Panel - Using the Color Panel - Working with Droppers, Paint Bucket, and Ink Bottles.

Unit II WORKING WITH TEXT AND GRAPHICS

10

Text Field Types in Flash - The Text Tool and the Property Inspector - Font Export and Display - Sampling and Switching Fills and Strokes - Transforming Gradients and Bitmap Fills - Gradient Transform Used for Lighting Effects - Applying Modify Shape Menu Commands - Free Transform Commands and Options - Modifying Item Types - Using the History Pane.

Unit III ANIMATION STRATEGIES **12**

Establishing Ground Rules -Defining Variables - Adding Personality - Manipulating Perceptions and Illusion - Understanding the Laws of Nature -Timeline Animation - Basic methods of Flash Animation -Frame-by-Frame Animation - Modifying Multi frame Sequence -Using Tweens for Animation -Integrating Multiple Animation Sequence -Organizing Symbol Instances on the Main Timeline -Reusing and Modifying Symbol Instances - Duplicating Tweened Animation Properties with the Copy Motion Command.

Unit IV APPLYING FILTERS, EFFECTS AND LAYER TYPES **10**

Applying Filters in Flash -Controlling Color -Layering Graphics with Blend Mode -Using Timeline Effects for Graphics and Animation - Motion Guides -Mask Layers - Motion Guides and Movie Clip Masks -Using Distribute to Layers.

Unit V CHARACTER ANIMATION TECHNIQUES **12**

Working with Large File Sizes -Some Cartoon Animation Basics - Animator's Keys and Inbetweening -Coloring the Art -Flash Tweening-.Adding- Sound Identifying- Sound File Import and Export Formats -Importing Sounds into Flash - Assigning a Sound to a Button -Adding Sound to the Timeline.

TOTAL: 54 Hours

Text Books:

1. Adobe Flash CS3 Professional By Robert Reinhardt, Snow Dowd, 2007
2. Flash 5 for PC/MAC, Sami Ben-Yahia, ENI,2001.

Reference Books:

- 1.Flash in a Flash Web Development, Anushka Wirasinha, PHI,2002.
2. Flash 8 ActionScript Bible, Lott, Joey, John Wiley & Sons,2006.

Course Objective: This course provides concepts of Advance Excel such as Financial Functions, Date and Time Functions, VLookup, Analysis Tool Pack.

Course Outcomes:

CO-1: Familiar to create and use defined names in a workbook

CO-2: Aware of using Filters

CO-3: Knowledge of applying date and time function in Excel

CO-4: Understand and use a range of lookup and reference Function.

CO-5: Obtain skill to create summaries in spreadsheets using subtotals

CO-6: Ability to draw charts and graphs using formulas.

CO-7: Gain practical stub to implement variety of data validation techniques

CO-8: Acquire skill to Perform what-if analysis.

CO-9: Understand and create simple PivotTables

CO-10: Construct and operate PivotTables using some of the more advanced techniques

Unit I INTRODUCTION

10

Understanding Excel's Files, Ribbon And Shortcut: CreateA Workbook - Enter Data In A Worksheet - Format A Worksheet - Format Numbers In A Worksheet - Create An Excel Table -Filter Data By Using An Autofilter - Sort Data By Using An Autofilter.

Unit II DATE AND TIME

10

Working With Dates And Times &Text: Working With Dates &Time, Creating Formulas That Manipulate Text – Upper, Proper, Lower, Concatenate, Text To Column- Creating Formulas That Count, Sum, SubTOTAL: CreateA Formula - Use A Function In A Formula - Creating Formulas That Look Up Values: Vlookup, Hlookup, Match &Index .

Unit III FINANCIAL FUNCTIONS

10

Creating Formulas For FINANCIAL Applications: Introduction To Formulas E.G. PV, PMT, NPER, RATE, Creating Balance Sheet, Investment Calculations, Depreciation Calculations- Creating Charts And Graphics: Chart Your Data, Creating Sparkline Graphics, Using Insert Tab Utilities.

Unit IV FORMATTING

12

Using Custom Number Formats:Right Click, Format Cells Window - Using Data Tab And Data Validation:Getting External Data, Remove Duplicates, Apply Data Validation & Using Utilities From Data Tab - Protecting Your Work: Using Review Tab Utilities - Performing Spreadsheet What-Lf Analysis:Create A Macro - Activate And Use An Add-In.

Unit V ANALYSIS

12

Analyzing Data With The Analysis Tool Pack: Anova,Correlation, Covariance, Descriptive Statistics, Histogram, Random Number Generation, Rank And Percentile, Regression, T-Test, Z Test - Using Pivot Tables For Data Analysis:Create Data Base For Pivot, Analyzing Data With Pivot Tables, Producing Report With A Pivot.

TOTAL: 54Hours

Text Books:

1. Excel 2010 Bible [With CDROM]by John Walkenbach, John Wiley & Sons, 2010
2. Maturing Financial modeling in Microsoft excel, Day, Alastair, Pearson Education, 2nd Edition, 2007.

Reference Books:

1. Excel 2007 for Dummies, Greg Harvey, John Wiley & Sons, 2006
2. New Perspectives on Microsoft Office Excel 2007, June Jamrich Parsons , Dan Oja , Roy Ageloff , Patrick Carey, Course Technology; 1 edition, 2013

Course Objective: This course introduces concepts of Statistical Package for Social Sciences and also working with it.

Course Outcomes:

CO-1: Understand the background and introduction of SPSS

CO-2: Familiar with Structure of SPSS

CO-3: Acquire the skill to perform the basic workings of SPSS, and basic statistical analyses.

CO-4: Obtain the knowledge to implement basic statistical concepts such as Regression.

CO-5: Gain practical knowledge to perform database management tasks.

CO-6: Knowledge of interpreting data.

CO-7: Get idea to implement descriptive statistics using SPSS.

CO-8: Construct and implement comparison statistics.

CO-9: Obtain Knowledge of implementing non parametric statistics.

CO-10: Learn to apply ANNOVA in SPSS

Unit I INTRODUCTION 10

Brief Description And History Of SPSS - Running SPSS And The Initial Window(S) - Running SPSS - The Initial SPSS Window(S) Overview The Title Bar The Menu Bar The (Power) Tool Bar The Data Editor (Data View And Variable View) The Status Bar.

Unit II OVERVIEW 10

Sample SPSS Session Overview Of This Exercise -Open File - List Cases - Frequencies - Explore - Graphics - Non Parametric Wilcoxon Test - Correlation – Regression.

Unit III COMPUTATION 10

Creation Of A Small Data File And Computation Of New Variables Overview- Preliminary Considerations About Data Structures -Creation Of A Data Dictionary - Entering Data - Moving Around The Data - Editing Data - Computation Of New (Or Existing Variables) .

Unit IV COMPARITIVE STATISTICS

12

Data Entry - Descriptive Statistics-. Examining Assumptions Of Parametric Statistics - Test For Normality- Test For Homogeneity Of Variances- Transformations- Comparative Statistics : Comparing Means Among Groups.

Unit V COMPARISON TEST

12

Comparing Two Groups Using Parametric Statistics -Two-Sample T-Test -Paired T-Test -Comparing Two Groups Using Non-Parametric Statistics - Mann Whitney U Test - Comparing Three Or More Groups Using Parametric Statistics - One-Way ANOVA And Post-Hoc Tests - Comparing Three Or More Groups Using Non-Parametric Statistics - Kruskal-Wallis Test - For Studies With Two Independent Variables.

TOTAL: 54 Hours

Text Books :

- 1.Discovering Statistics Using IBM SPSS Statistics,Andy Field,SAGE Publications Ltd,4th edition, 2013.
2. SPSS: Stats Practically Short and Simple ,Sidney Tyrrell, Bookboon, 2009

Reference Books:

- 1.SPSS for you, Rajathi.A, MJP Publishers 2010.
- 2.SPSS for Dummies,Griffith, Arthur, John Wiley, 2007.

Course Objective: This course introduces the basic accounting concepts with inventory details and also the Ledger accounts and voucher features and cash flow statements are studied in detail by the students to enhance the knowledge of accounting in computer.

Course Outcomes:

CO-1: To understand the concepts of financial accounting, utility of accounting, advantages and limitations of accounting.

CO-2: Helps to work with well-known accounting software.

CO-3: Gain the knowledge of the origin and features of Tally accounting software and inventory features.

CO-4: Detailed study about classification of accounts, terms used in accounting and fundamental conventions, principles and concepts of accounting.

CO-5: Learn to create the inventory masters, stock groups, stock categories and features of Tally for inventory accounting.

CO-6: Learn to Copying Masters, Set Credit Limits & Credit Periods for Debtors &/or Creditors, Advance options for automatic calculation of interest.

CO-7: To understand the Introduction to Voucher Screen of Tally, Voucher Header, Voucher Body, To Save Voucher, To Modify saved voucher, To Print Voucher online Learn about a Payment Voucher, a Receipt Voucher, and Use of Voucher Configuration Option (F12).

CO-8: To understand about Sales and Purchase Account, Concept of Sales Returns/ Returns Inwards, Concept of Purchase Returns or Returns Outwards, Concept of multiple Sales & Purchase Accounts, Sales Voucher and Purchase Voucher.

CO-9: To learn about Purchase procedure in a company Purchase Order, Receipt of Goods, Purchase invoice, Purchase Returns, Sales procedure in a company, Sales Order, Dispatch of Goods, Sales invoice, Sales return, Inventory Reports, Reports pertaining to inventory.

CO-10: To learn the Advanced Features Of Tally Printing & Housekeeping, Backup & Restore, etc. To manage a Business and Introduction to Cost Centers, Cost Categories, Provisional Vouchers, MIS Reports.

Unit I INTRODUCTION **15**

Financial Accounting, What Is Accounting, Utility Of Accounting, Advantages Of Accounting, Book Of Accounts- Cash Book, Journal, General Ledger, Classification Of Accounts And Rules Of Debit And Credit, Financial Statement-Trial Balance – Interduction To Computerized Accounting Software Tally – Features Of Tally – Differences Between Manual Accounting And Computerized Accounting – Company Creation.

Unit II FEATURES AND CONFIGURATION **15**

Features, General Features, Accounting Features- Inventory Features-Set Modify Other Company Features- : Configure- General. Accounts Info: Single And Multiple Ledgers, Conversion Of Name, Duplicate Name, Accounts Info, Accounts Info Menu-F11: Features, F12: Configuration, Account Group- Ledger Accounts-Budgets creation Of Budgets, Period Of Budget, Set/Alter Budgets, Types Of Budget. Voucher Types.

Unit III INVENTORY INFORMATION **15**

Inventory Info Menu: F11: Features- Inventory Features. F12: Configure- Inventory Masters - Stock Group- Stock Categories- Stock Categories- Stock Items- Godowns. Inventory Vouchers: F11: Features -F12: Configuration- Inventory Allocation-Invoicingconfiguration Of Invoice Info Menu – Inventory Vouchers - Printing Inventory Vouchers - Accounting Reports-Display: Display Options At Gateway, Access From The Gateway, And Layout Of Display Screen, Buttons.F12: Range, F12: Values, New Column, Alter Column, Delete Column, Auto Column, Balance Sheet- Trial Balance- Accounts Books. Statement Of Accounts.

Unit IV MIS REPORTS **15**

Ratio Analysis, Cash And Funds- Cash Flow, Funds Flow. Purchase Bills Pending, Sales Bills Pending, Exception Reports- Negative Stock, Negative Ledger, Overdue Payable, Memorandum Voucher, And Reverse Journal Voucher, Optional Voucher.

Unit V HOUSEKEEPING **15**

Backup-Backup Strategy. Restore, Rewriting. Security: Password, Security Control, Types Of Security, Create New Security Level- Name Of Security Level, Use Basic Facilities Of, Days Allowed For Back-Dated Vouchers. Users And Passwords.

TOTAL: 75 Hours

Text Books:

1. Accounting System : M. Sulochana, K. Kameswara rao & R. Kishore Kumar, Kalyani Publishers, 2009.
2. Tally Financial Accounting Programme – Tally India Pvt. Ltd.

Reference Books:

1. Tally Tutorial Accounts – A.K. Nadani.
2. Tally power of Simplicity– Tally Gold Quick reference manual – Tally India Pvt. Ltd.,

Course Objective: This course introduces the basic computer concepts and various problem solving methods, including word processing, Calculations using Spreadsheet applications and Data storage using Database management.

Course Outcomes:

CO – 1: To understand the Evolution of Computers, Classification of Computers.

CO - 2: Ability to understand about Modern Digital Computer, Overview of Operating System, types of software.

CO - 3: To understand about Word Basics, Formatting Features, and Editing Text & Paragraphs.

CO - 4: Creating Mail Merge, Macros, Tables, Graphics and Frames.

CO –5: Formatting a Worksheet & Creating Graphic Objects.

CO –6: Working With Graphs and Creating Charts.

CO –7: Creating a New Database using MSACCESS.

CO - 8: Finding Information in Databases, Creating Reports, Importing Data from Other Databases.

CO - 9: Creating and Formatting a Presentation.

CO - 10: Adding Picture and Graph, Adding Sound and Video to the presentation.

Unit I FUNDAMENTALS OF COMPUTER

15

Evolution Of Computers - Classification Of Computers – Definition Of Hardware- CPU – Inputs/Outputs – Storage Devices - Types Of Software - Overview of Operating System – Multitasking OS – Overview Of Modern Digital Computer.

Unit II MS WORD

15

Word Processing Programs And Their Uses – Word Basics – Formatting Features -Editing Text & Paragraphs- Automatic Formatting And Styles –Mail Merge–Working With Tables-Graphics And Frames – Macro - Special Features Of Word – Automating Your Work And Printing Documents- Desktop Publishing Service – Converting Doc Into Www Pages.

Unit III MS EXCEL

15

Spreadsheet Programs – Applications – Menus-Commands-Toolbars – Working &Editing In Workbook – Creating Formats &Links – Formatting A Worksheet &Creating Graphic Objects – Calculations – Working With Formula - Organizing Data, Importing Data, Functions – Data Handling – Working With Graphs - Creating Charts - Managing Workbooks.

Unit IV MS ACCESS

15

Introduction - Planning A Database - Starting Access - Data Types And Properties - Creating A New Database - Creating Tables - Working With Forms - Creating Queries - Finding Information In Databases - Creating Reports - Types Of Reports - Printing &Print Preview – Importing Data From Other Databases Viz. MS Excel Etc.

Unit V MS POWERPOINT

15

Getting Started In Powerpoint – Creating A Presentation - Setting Presentation Style - Adding Text To The Presentation - Formatting A Presentation - Adding Style, Color - Arranging Objects - Adding Header &Footer - Creating And Editing Slides – Slide Layout – Adding Picture And Graph – Adding Sound And Video – Adding Auto Shape - Custom Animation - Previewing A Slide Show.

TOTAL: 75Hours

Text Books:

1. Computing Fundamentals & C Programming, E.Balagurusamy , Tata McGrawhill.
2. MS office 2000 ,Sanjay Saxena, Vikas publication house pvt.ltd.

Reference Books:

- 1.Microsoft Office 2003 : The Complete Reference, Jennifer AckermanKettell , Guy Hart-Davis , Curt Simmons ,McGraw-Hill Osborne, 2nd edition,2003.
2. Office Automation & Word Processing, Balaguruswamy, TMH.

15BCS159 SYSTEM ADMINISTRATION AND MAINTENANCE 5004

Course Objective: To create an awareness of various components of Computer Systems, to learn to maintain, upgrade, and troubleshoot your PC system. To provide experience in upgrading and repairing Personal Computers.

Course Outcomes:

CO-1: To create an awareness of Trouble Shooting PC.

CO-2: To Understand the concept of BIOS.

CO-3: To learn basics about Disks Trouble Shooting.

CO-4: To learn basics about Drives Trouble Shooting.

CO-5: To understand the concepts of Mother Board.

CO-6: To learn, maintain and upgrade Mother Board Trouble Shooting.

CO-7: To understand the fundamental Memory concepts.

CO-8: To maintain, upgrade and Trouble Shooting Memory.

CO-9: To learn the concepts of Printer Technology.

CO-10: To get experience in Upgrading and Repairing printers.

Unit I TROUBLESHOOTING GENERAL PC PROBLEMS 15

Troubleshooting General PC Problems: Introduction, General Troubleshooting Rules, Common Problems & Solutions, Preventive Maintenance. BIOS: Typical Motherboard BIOS, BIOS Features, BIOS & Boot Sequences, BIOS Shortcoming & Compatible Issues, BIOS Troubleshooting, BIOS Upgrades.

Unit II DISK AND DRIVE TROUBLE SHOOTING 15

Hard Disk: Introduction, Disk Basics, Disk Performance & Characteristics, Drive, Construction, Drive Testing & Troubleshooting.

Unit III MOTHER BOARD 15

Motherboard & Buses: Introduction, Motherboard Components, Expansion Slots System Bus Functions & Features. Upgrading & Troubleshooting Motherboard, General Bus.

Unit IV BASIC MEMORY CONCEPTS**15**

Basic Memory Concepts: Introduction, Installing Memories, Upgrade Options & Strategies, Replacing Memories With Higher Capacity. Troubleshooting Memory.

Unit V PRINTERS**15**

Printers: Printer Technology, How Printer Works, Attaching Printer, Installing Printer. Drivers, Preventive Maintenance, Common Printer Problems & Solution Error Code: Beep Code, Post Code, Post Reader Card.

TOTAL: 75Hours**Text Books:**

1. Upgrading & Repairing PCs: Muller – Prentice Hall – 10th Edition, 2000.
2. Complete PC Upgrade & Maintenance Guide: Mark Minasi–BPB Publishers–15thEdition, 2004.

Reference Books:

1. Howes, Timothy A., Mark C. Smith, and Gordon S. Good. Understanding and deploying LDAP directory services. Addison-Wesley Longman Publishing Co., Inc., 2003.

Course Objective: This course introduces the basic concepts of desk top publishing with document setup, fonts, composing machines, graphics, tones, book preparation and file maintenance.

Course Outcomes:

CO-1: Ability to understand different operating systems and its working principles for a desktop computer.

CO-2: To implement sending and receiving e-mails and working with internet.

CO-3: To identify the function of each component of the Desktop Publishing document: content provider, layout specialist, designer.

CO-4: To implement the effects of word processor formats when placing files into a Desktop Publishing program.

CO-5: To apply principles of good page layout and design to create single and multiple page documents containing graphic illustrations.

CO-6: To create a document with no formatting and place it into a PageMaker document using Desktop Publishing software where the text will be formatted and composing.

CO-7: To locate and select or create appropriate graphic illustrations; crop, resize and edit illustrations as necessary using graphic editing software.

CO-8: To use the graphic tools in the Desktop Publishing program to add graphic effects such as borders, rules, shading, colors, gradients, and stroke size and style.

CO-9: To design Invitations and Compiling Books with proper spacing or padding.

CO-10: Ability to choose the correct printer from the network and properly print either one sided or two sided, long edge binding or short edge binding.

Unit I FUNDAMENTALS OF COMPUTERS

15

Introduction To Computers, Hardware And Software – Applications Of Computers – Input Devices – Output Devices – Storage Media – Types Of Software-Operating Systems – Introduction To DOS – DOS Commands And Tools – MS-Windows – Using The Desktop – Setup Using Control Panel – Windows Accessories – Files & Folder Management - Introduction To Internet – Browsers – Sending And Receiving E-Mail – File Downloading And Uploading.

Unit II DOCUMENT SET UP **15**

History Of Printing – Types Of Printing - Desktop Publishing: Introduction – Merits & Demerits – DTP And Traditional Composing – Cost & Estimation Of DTP Unit – Word Processing Using MS-Word: Basics – Text Formatting – Setting Header And Footer – Tables, Borders And Shading –Special Effects And Image Insertion.

Unit III TYPING AND COMPOSING PAGES **15**

Typography – Managing Fonts – Measurement Types For Fonts, Pages, Lines – Proof Reading – Page Setup – House Styles – Page Maker Case Study - Page Composing - Different Composing Methods And Processes – Composing Machines – Output Devices – Qwark Express Case Study

Unit IV DOCUMENT DESIGNING: **15**

Graphic Reproduction – Setting Tones, Shadowing, Highlight, Contrast For Images - Scanning Principles – Types Of Scanners And Their Use – Setting Resolution – Page Design – Color Types – Color Selection - Preparation Of Graphics – Book Preparation – Seminar Presentation – Imposition Techniques

Unit V FILE & PRINT MANAGEMENT: **15**

Printing – Types of Printers – Different Types Of File Formats – Icc Based Color Management – Preparation Of Project Work – Binding Techniques – Coreldraw Case Study.

TOTAL: 75Hours

Text Books:

1. Rapidex DTP Course, Shirish Chavan ,UNICORN Books Pvt. Ltd., 2007
2. A First Course in Computers,Sanjay Saxena, , Vikas Publishing House, 2005.

Reference Books:

1. DTP Manual, Pete Yeo, Chapman Hall.
2. Rapidex DTP Course:Coreldraw – 2005, Shirih Chauan, Unicorn Books.

Course Objective: This course introduces the basic concepts, various queries, triggers and stored routine of Mysql. It also gives the Cursor management, event management and user management of Mysql.

Course Outcomes:

CO-1: Establish a basic understanding of the analysis and design of a database.

CO-2: Understanding the process of a Database Development and Administration using SQL.

CO-3: Enhance Programming and Software Engineering skills and techniques using SQL.

CO-4: Establish a basic understanding of background materials needed for technical support using SQL.

CO-5: Solve a Database problems using Oracle 9i SQL by applying SQL commands to Create, Insert, Update, and Retrieve a simple database.

CO-6: Understand the service provided by a Database Management System and application of the Relational Database Model.

CO-7: Understand Transaction Processing and Multi-user Database support between a Production transaction database and a Data Warehouse.

CO-8: Understand the Client/Server structures used in Database Management Systems.

CO-9: Design and Implement a basic database using the Oracle Database Management System and PHPMyAdmin to create dynamic websites for visitors.

CO-10: Applying the concept of how to filter data based upon multiple conditions Updating and inserting data into existing tables and relationships between tables will affect the SQL.

Unit I INTRODUCTION TO SQL BASICS

15

Introduction: To Databases, Relational And Non-Relational Database System Mysql As A Non-Procedural Language. View Of Data. SQL Basics: Statements, Names (Table & Column Names), Data Types, Creating Database, Inserting Data, Updating Data, Deleting Data, Expressions, Built-In-Functions, Missing Data CREATE, USE, ALTER, RENAME, SHOW, DESCRIBE And DROP, PRIMARY KEY FOREIGN KEY (One And More Columns) Simple Validity Checking Using CONSTRAINTS.

Unit II SIMPLE, NESTED, SUBQUERIES **15**

Simple Queries: The SELECT Statement Multi-Table Queries: Simple Joins (INNER JOIN), SQL Considerations For Multitable Queries (Table Aliases, Qualified Column Names, All Column Selections Self Joins). Nested Queries: Using Sub Queries, Sub Query Search Conditions, Sub Queries & Joins, Nested Sub Queries, Correlated Sub Queries, Sub Queries In The HAVING Clause. Simple Transaction Illustrating START, COMMIT, And ROLLBACK.

Unit III MYSQL TRIGGERS AND STORED ROUTINE **15**

Mysql Triggers: Basics Of Trigger, Create And Drop A Trigger, Find All Triggers In Database. Mysql Stored Routine: Stored Routine, Create And Invoke A Stored Routine, Alter A Stored Routine, Drop A Stored Routine.

Unit IV MYSQL CURSOR MANAGEMENT AND EVENTS **15**

Utilize Functionalities Of Mysql Cursor: Basics Of Cursor, Defining The Cursor, Retrieve Values From Cursor, Close The Cursor. Mysql Events: Events, Turning Event Scheduler On Create The Event, Find All Events In Database, Chang The Event And Drop The Event.

Unit V USER MANAGEMENT, BACKUP AND RECOVERY **15**

User Management in MySQL: Basics of MySQL User, Access Control List, Manage User Accounts, GRANT And REVOKE Command, Reset Root Password. Backup And Recovery: Back Up Mysql, Uses For Backup, Backup Frequency, Copy Database Into Another Machine, Recovery From Crashes.

TOTAL: 75Hours

Text Books:

1. SQL a complete reference - Alexis Leon & Mathews Leon TMG.
2. Learning MySQL - Seyed M. M. and Hugh Williams, O'REILLY.

Reference Books:

1. PHP & MYSQL in easy steps, MCGrath, MIKE, MGH, 2012.
2. MySQL Administrator- Sheeri Cabral.

Course Objective: This course will make you familiar with the Computer & Web Technology, Investigating Crimes, E-Commerce, Cyber Space – Cyber Crime, Net-Neutrality. It also describes the various cyber law and cyber threats.

Course Outcomes:

CO-1: Knowledgeably awaked with the basics of cyberspace and cyber law.

CO-2: To know the importance of cyber law and its principles.

CO-3: To familiarize the international perspectives in cyber law.

CO-4: To know the councils were the source is wealth of knowledge.

CO-5: To understand the freedom of speech and expression in cyberspace.

CO-6: To understand the importance of data protection principles in cyberspace.

CO-7: To know the cybercrimes against individual and society.

CO-8: To clarify the various offences and laws against it.

CO-9: To understand about the defamation of individual or an organization.

CO-10: To know about the copyright protection of GUI tools with case studies.

Unit I INTRODUCTION

15

Computers and Its Impact In Society - Overview Of Computer And Web Technology - Need For Cyber Law -Cyber Jurisprudence At International And Indian Level.

Unit II CYBER LAW - INTERNATIONAL PERSPECTIVES

15

UN &International Telecommunication Union (ITU) Initiatives - Council Of Europe - Budapest Convention On Cybercrime - Asia-Pacific Economic Cooperation (APEC) -Organization For Economic Co-Operation And Development (OECD) - World Bank - Commonwealth Of Nations.

Unit III CONSTITUTIONAL & HUMAN RIGHTS ISSUES IN CYBERSPACE

15

Freedom Of Speech And Expression In Cyberspace - Right To Access Cyberspace – Access To Internet - Right To Privacy - Right To Data Protection.

Unit IV CYBER CRIMES & LEGAL FRAMEWORK

15

Cyber Crimes Against Individuals, Institution And State - Hacking - Digital Forgery - Cyber Stalking/Harassment -Cyber Pornography -Identity Theft &Fraud - Cyber Terrorism □ Cyber Defamation - Different Offences Under IT Act, 2000.

Unit V CYBER THREATS**15**

Cyber Defamation - Different Types Of Civil Wrongs Under The IT Act, 2000 - Intellectual Property Issues In Cyber Space - Interface With Copyright Law - Interface With Patent Law - Trademarks & Domain Names Related Issues.

TOTAL: 75Hours**Text Books:**

1. Computer Law, Chris Reed & John Angel, OUP, New York, (2007).
2. Cyber Laws, Justice Yatindra Singh, Universal Law Publishing Co, New Delhi, (2012).
3. Legal Dimensions of Cyber Space, Verma S, K, Mittal Raman, Indian Law Institute, New Delhi, (2004)

Reference Books:

1. Cyber Law, Jonathan Rosenoer, Springer, New York, (1997).
2. The Information Technology Act, 2005: A Handbook, Sudhir Naib, OUP, New York, (2011)

Syllabus

Ability Enhancement Compulsory Courses (AECC)

15LTA001

தமிழ் மொழி, இலக்கிய வரலாறு – அறிமுகம்

5 0 0 4

நோக்கம்: தமிழ்மொழி மற்றும் இலக்கியத்தின் வரலாற்றை அறிமுகம் செய்யும் நோக்கில் இப்பாடம் வடிவமைக்கப்பட்டுள்ளது. தமிழ்மொழியின் வரலாற்றை அறிவியல் கண்ணோட்டத்துடனும் மொழிக்குடும்பங்களின் அடிப்படையிலும் விளக்குகிறது. சங்க இலக்கியம் தொடங்கி, இக்கால இலக்கியம் வரையிலான தமிழிலக்கிய வரலாற்றை இலக்கிய வரலாறு அறிமுகப்படுத்துகின்றது. அரசு வேலை வாய்ப்பிற்கான போட்டித் தேர்வுகளுக்குப் பயன்படும் வகையிலும் இப்பாடம் அமைந்துள்ளது.

அலகு 1 தமிழ் மொழி வரலாறு

15மணி நேரம்

மொழிக்குடும்பம் - இந்திய மொழிக்குடும்பங்கள் - இந்திய ஆட்சி மொழிகள் - திராவிட மொழிக்குடும்பங்கள் - திராவிட மொழிகளின் வகைகள் - திராவிட மொழிகளின் சிறப்புகள் - திராவிட மொழிகளின் வழங்கிடங்கள் - திராவிட மொழிகளுள் தமிழின் இடம் - தமிழ்மொழியின் சிறப்புகள் - தமிழ் பிறமொழித் தொடர்புகள்.

அலகு 2 சங்க இலக்கியம்

15மணி நேரம்

சங்க இலக்கியம் - எட்டுத்தொகை - நற்றிணை - குறுந்தொகை - ஐங்குறுநூறு - பதிற்றுப்பத்து - பரிபாடல் - கலித்தொகை - அகநானூறு - புறநானூறு - பத்துப்பாட்டு - திருமுருகாற்றுப்படை - சிறுபாணாற்றுப்படை - பெரும்பாணாற்றுப்படை - பொருநராற்றுப்படை - மலைபடுகடாம் - குறிஞ்சிப்பாட்டு, முல்லைப்பாட்டு, பட்டினப்பாலை - நெடுநல்வாடை - மதுரைக்காஞ்சி.

அலகு 3 அற இலக்கியங்களும் காப்பியங்களும்

15 மணி நேரம்

களப்பிரர் காலம் விளக்கம் - நீதி இலக்கியத்தின் சமூகத்தேவை -
பதினெண்கீழ்க்கணக்கு நூல்கள் அறிமுகம் - திருக்குறள், நாலடியார்.

காப்பியங்கள் - ஐம்பெருங்காப்பியங்கள் மற்றும் ஐஞ்சிறுங்காப்பியங்கள்
அறிமுகம்-காப்பிய இலக்கணம் - சிலப்பதிகாரம் - மணிமேகலை -
சீவகசிந்தாமணி - வளையாபதி - குண்டலகேசி.

அலகு 4 பக்தி இலக்கியங்களும் சிற்றிலக்கியங்களும்

15 மணி நேரம்

தமிழகப் பக்தி இயக்கங்கள் - பக்தி இலக்கியங்கள் - சைவ இலக்கியம் -
நாயன்மார்கள் அறுபத்து மூவர் - சமயக்குரவர் நால்வர் - வைணவ இலக்கியம் -
பன்னிரு ஆழ்வார்கள் - முதல் மூன்று ஆழ்வார்கள்.

சிற்றிலக்கியக் காலம் - சிற்றிலக்கியங்கள் - வகைகள் - பரணி - கலிங்கத்துப்பரணி
- குறவஞ்சி - குற்றாலக் குறவஞ்சி - பிள்ளைத்தமிழ் - மீனாட்சியம்மைப்
பிள்ளைத்தமிழ் - தூது - தமிழ்விடு தூது - கலம்பகம் - நந்திக்கலம்பகம் - பள்ளு -
முக்கூடற்பள்ளு.

அலகு 5 இக்கால இலக்கியங்கள்

15 மணி நேரம்

நவீன காலம் - நவீன இலக்கியம் - உள்ளடக்கம் - புதுக்கவிதை - தோற்றமும்
வளர்ச்சியும்- நாவல் - முதல் மூன்று நாவல்கள் - நாவலின் வகைகள் - பொழுது
போக்கு நாவல்கள் - வரலாற்று நாவல்கள் - சமூக நாவல்கள் - இக்கால நாவல்கள்-
மொழிபெயர்ப்பு நாவல்கள் - சிறுகதை -வகைகளும் வளர்ச்சியும் - நாடகம் -
காலந்தோறும் நாடகங்கள் - புராண இதிகாச நாடகங்கள் - சமூக நாடகங்கள் -
வரலாற்று நாடகங்கள் - மொழிபெயர்ப்பு நாடகங்கள் - நகைச்சுவை நாடகங்கள்.

பார்வை நூல்கள்

1. அகத்தியலிங்கம். ச., “திராவிடமொழிகள் தொகுதி 1”, மணிவாசகர் பதிப்பகம், முதற்பதிப்பு, 1978.
2. சக்திவேல். ச., “தமிழ்மொழி வரலாறு”, மணிவாசகர் பதிப்பகம், முதற்பதிப்பு 1998.
3. பூவண்ணன், “ தமிழ் இலக்கிய வரலாறு”, சைவசித்தாந்த நூற்பதிப்புக் கழகம், முதற்பதிப்பு, 1998.
4. வரதராசன். மு., “இலக்கிய வரலாறு”, சாகித்ய அகாதெமி, ஒன்பதாம் பதிப்பு, 1994.
5. விமலானந்தம். மது.ச., “இலக்கிய வரலாறு”, பாரி நிலையம், மறுபதிப்பு, 2008.

நோக்கம்: சங்க காலம் தொடங்கி தற்காலம் வரையிலும் தமிழில் உள்ள படைப்பிலக்கியங்களை இப்பாடம் அறிமுகம் செய்கின்றது. தமிழ் இலக்கியத்தில் தேர்ந்தெடுக்கப்பட்ட மிக முக்கியமான செய்யுட்கள், கவிதைகள், கதைகள், உரைநடை ஆகியவற்றைக்கொண்டு இப்பாடம் கட்டமைக்கப்பட்டுள்ளது. மாணாக்கரிடம் இலக்கியத் தேடலை உருவாக்குவதும், தற்சார்புடைய அறிவை மேம்படுத்துவதும் இப்பாடத்தின் நோக்கமாகும்.

அலகு 1 செவ்வியல் இலக்கியங்கள்

15 மணி நேரம்

திருக்குறள்- அன்புடைமை, ஒழுக்கமுடைமை, பெரியாரைத்துணைக்கோடல் -மூன்று அதிகாரங்கள் முழுமையும்.

புறநானூறு- பாடல் எண்: 15, 55, 152, 153, 192 -ஐந்து பாடல்கள்.

குறுந்தொகை- பாடல் எண்: 2, 167, 27, 202, 154 - ஐந்து பாடல்கள்.

அலகு 2 காப்பியங்கள்

15 மணி நேரம்

சிலப்பதிகாரம்- கனாத்திறம் உரைத்தக் காதை முழுவதும்.

மணிமேகலை- பவத்திறம் அறுக எனப் பாவை நோற்ற காதை முழுவதும்.

கம்பராமாயணம் - மந்தரைச் சூழ்ச்சிப்படலம் (தேர்ந்தெடுக்கப்பட்ட ஒன்பது பாடல்கள்).

அலகு 3 கவிதையும் புதுக்கவிதையும்

15 மணிநேரம்

பாரதிதாசனின் 'தமிழியக்கம்' -(i) நெஞ்சு பதைக்கும் நிலை - (ii) இருப்பதைவிட

இறப்பது நன்று - இரண்டு கவிதைகள்.

ஈரோடு தமிழன்பனின், "அந்த நந்தனை எரித்த நெருப்பின் மிச்சம்" என்னும்

தொகுதியில் இடம்பெற்றுள்ள 'விடிகிறது' என்னும் புதுக்கவிதை.

அலகு 4 சிறுகதைகள்

15 மணி நேரம்

தி. ஜானகிராமனின் 'சக்தி வைத்தியம்'

கி. ராஜநாராயணனின் 'கதவு' - இரண்டு கதைகள்

அலகு 5 உரைநடை

15 மணி நேரம்

வைரமுத்து எழுதிய 'சிற்பியே உன்னைச் செதுக்குகிறேன்' முழுவதும்.

மொத்தம்: 75 மணி நேரம்

பாட நூல்கள்:

1. இரவிச்சந்திரன். சு. (ப.ஆ), "செய்யுள் திரட்டு", வேல்ஸ் பல்கலைக்கழகம், முதற்பதிப்பு, 2008.

2. வைரமுத்து. இரா., "சிற்பியே உன்னைச் செதுக்குகிறேன்", திருமகள் நிலையம், பதினேழாம் பதிப்பு, 2007.

பார்வை நூல்கள்:

1. பாலச்சந்திரன்.சு., "இலக்கியத் திறனாய்வு", நியூ செஞ்சரி புக் ஹவுஸ், பத்தாம் பதிப்பு, 2007.

2. மாதையன்.பெ., "தமிழ்ச் செவ்வியல் படைப்புகள்", நியூ செஞ்சரி புக் ஹவுஸ், முதல் பதிப்பு, 2009.

3. வரதராசன்.மு., "குறள் காட்டும் காதலர்", பாரி நிலையம், மறுபதிப்பு, 2005.

நோக்கம்: தற்கால அன்றாடத்தேவைக்குரிய வகையில் தமிழ்மொழியைச் செம்மையாகப் பயன்படுத்த வேண்டும் என்னும் நோக்கில் இப்பாடம் உருவாக்கப்பட்டுள்ளது. மாணாக்கரின் வேலைவாய்ப்பு நேர்காணல்கள் மற்றும் குழு உரையாடல்களை எதிர்கொள்வதற்கேற்ற பேச்சுத்திறன் மேம்பாடு, செய்தித்தாள்களை நுட்பமாக அணுகும்விதம், சிறந்த கடிதங்களை எழுதுவதற்கான பயிற்சி போன்ற பயன்பாடு சார்ந்த மொழிப்பயிற்சியை இப்பாடம் அளிக்கின்றது.

அலகு 1 மொழி

15 மணி நேரம்

பிழை நீக்கி எழுதுதல் - ஒற்றுப்பிழை நீக்கி எழுதுதல் - தொடர்பிழை நீக்கி எழுதுதல் - ஒற்று மிகும் இடங்கள் - ஒற்று மிகா இடங்கள் - பிற மொழிச் சொற்களை நீக்கி எழுதுதல் - பயிற்சிகள்.

அலகு 2 பேச்சு

15 மணி நேரம்

பேச்சுத்திறன் - விளக்கம் - பேச்சுத்திறனின் அடிப்படைகள் - வகைகள் - மேடைப்பேச்சு - உரையாடல் - குழுவாக உரையாடல் - பயிற்சிகள். தலைவர்களின் மேடைப் பேச்சுகள் - பெரியார் - அண்ணா - கலைஞர்.

அலகு 3 எழுதுதிறன்

15 மணி நேரம்

கலைச்சொல்லாக்கம் - தேவைகள் - கலைச்சொற்களின் பண்புகள் - கலைச்சொல்லாக்கத்தில் தவிர்க்க வேண்டியவை - அறிவியல் கலைச்சொற்கள். கடிதம் - வகைகள் - அலுவலகக் கடிதங்கள் - பயிற்சி - அறிஞர்களின் கடிதங்கள் - கடிதங்களின் வழி கற்பித்தல் - சில அறிஞர்களின் கடிதங்கள் - நேரு.

அலகு 4 மொழிபெயர்ப்பு

15 மணி நேரம்

மொழிபெயர்ப்பு அடிப்படைக் கோட்பாடுகள் - மொழிபெயர்ப்பு முறைகள் - மொழிபெயர்ப்பாளரின் தகுதிகள்.

மொழிபெயர்ப்பு வகைகள் - சொல்லுக்குச் சொல் மொழிபெயர்த்தல் - தழுவல் - கட்டற்ற மொழிபெயர்ப்பு - மொழியாக்கப்படைப்பு - இயந்திர மொழிபெயர்ப்பு - கருத்துப்பெயர்ப்பு - மொழிபெயர்ப்பு நடை - மொழிபெயர்ப்பு சிக்கல்களும் தீர்வுகளும்.

பயிற்சி: அலுவலகக் கடிதங்களை மொழிபெயர்த்தல் (ஆங்கிலத்திலிருந்து தமிழுக்கு).

அலகு 5 இதழியல் பயிற்சி

15 மணி நேரம்

இதழ்களுக்குத் தலையங்கம் எழுதுதல் - நூல் மதிப்புரை எழுதுதல் - சாதனையாளரை நேர்காணல் - நிகழ்ச்சியைச் செய்தியாக மாற்றுதல்.

மொத்தம்: 75 மணி நேரம்

பார்வை நூல்கள்:

1. ஈஸ்வரன்.ச., சபாபதி.இரா., “இதழியல்”, பாவை பப்ளிகேஷன்ஸ், முதற்பதிப்பு, 2004.
2. ஈஸ்வரன்.ச., “மொழிபெயர்ப்பியல்”, பாவை பப்ளிகேஷன்ஸ், முதற்பதிப்பு, 2005.

3. எட்கர் தார்ப், ஷோவிக் தார்ப், “நேர்முகத் தேர்வில் வெற்றிபெற”, கிழக்குப் பதிப்பகம், இரண்டாம் பதிப்பு, 2009.
4. சுப்பிரமணியன்.பா.ரா., ஞானசுந்தரம்.வ., (ப.ஆ)“தமிழ்நடைக் கையேடு”, இந்தியமொழிகளின் நடுவண் நிறுவனம், மைசூர் மொழி அறக்கட்டளை மற்றும் தஞ்சைத்தமிழ்ப் பல்கலைக்கழகம் - வெளியீடு, நான்காம் மீள்பதிப்பு, 2010.
5. சுப்புரெட்டியார்.ந., “தமிழ் பயிற்றும் முறை”, மெய்யப்பன் பதிப்பகம், ஐந்தாம் பதிப்பு, 2006.

நோக்கம்: பண்டைத் தமிழரின் வாழ்வியல் நெறிகள் இயல்பானதும் இயற்கையோடு இணங்கிச் செல்வதுமாகும்; மிகவும் பழமையானதும் பண்பட்டதுமாகும். அன்பான அக வாழ்க்கையைக்கூட செம்மையாகத் திட்டமிட்டுள்ளனர். பொழுதுபோக்கு, போர்முறைகள், கலை, சமயம், அரசியல், அறிவியல் என அனைத்திலும் தமிழர் சிறந்து விளங்குவதை விளக்கும் பாடமாக இது அமைந்துள்ளது. அரசு வேலை வாய்ப்பிற்கான போட்டித் தேர்வுகளுக்குப் பயன்படும் வகையிலும் இப்பாடம் அமைந்துள்ளது.

அலகு 1: நாகரிகம், பண்பாடு

15 மணி நேரம்

சொற்பொருள் விளக்கம் - பண்டைத் தமிழர் வாழ்வியல் - அகம் - களவு - கற்பு - குடும்பம் - விருந்தோம்பல் - உறவு முறைகள் - சடங்குகள் - நம்பிக்கைகள் - பொழுதுபோக்கு - புறம் - போர் முறைகள் - நடுகல் வழிபாடு - கொடைப்பண்பு.

அலகு 2: கலைகள்

15 மணி நேரம்

சிற்பம் - ஓவியம் - இசை - கூத்து - ஒப்பனை - ஆடை அணிகலன்கள்.

அலகு 3: சமயம்

15 மணி நேரம்

சைவம் - வைணவம் - சமணம், பௌத்தம் வெளிப்படுத்தும் பண்பாடு.

அலகு 4: அரசியல்

15 மணி நேரம்

அரசு அமைப்பு - ஆட்சி முறை - உள்நாட்டு வணிகம் - வெளிநாட்டு வணிகம் - வரி வகைகள் - நாணயங்கள் - நீதி முறை.

அலகு 5: அறிவியல்

15 மணி நேரம்

கல்வி - வேளாண்மை - வானியல் அறிவு - மருத்துவம் - கட்டிடக்கலை

மொத்தம்: 75 மணி நேரம்

பார்வை நூல்கள்:

- 1.கே.கே. பிள்ளை, “தமிழக வரலாறு: மக்களும் பண்பாடும்”, உலகத் தமிழாராய்ச்சி நிறுவனம், மீள்பதிப்பு, 2009.
- 2.பக்தவச்சல பாரதி, “தமிழர் மானிடவியல்”, அடையாளம், இரண்டாம் பதிப்பு, 2008.
- 3.தட்சிணாமூர்த்தி. அ., “தமிழர் நாகரிகமும் பண்பாடும்”,யாழ் வெளியீடு, மறுபதிப்பு, 2011.
- 4.தேவநேயப்பாவாணர். ஞா., “பழந்தமிழர் நாகரிகமும் பண்பாடும்”, தமிழ்மண் பதிப்பகம், சென்னை.
- 5.வானமாமலை.நா., “தமிழர் வரலாறும் பண்பாடும்”, நியூ செஞ்சுரி புக் ஹவுஸ், ஆறாம் பதிப்பு, 2007.

(Syllabus for the I year I semester common to all UG courses)

Course Objective: To introduce French Language. To enable the students to understand and to acquire the basic knowledge of French Language with the elementary grammar.

Unit I INTRODUCTION 15

Introduction - Alphabet – Comment prononcer, écrire et lire les mots- Base : Les prénoms personnel de 1^{er}, 2^{ème} et 3^{ème} personnes – Conjugaisons les verbes être et avoir en forme affirmative, négative et interrogative

UnitII LEÇONS 1- 3 15

Leçons 1. Premiers mots en français,- 2. Les hommes sont difficiles,- 3 Vive la liberté- Réponses aux questions tirés de la leçon - Grammaire : Les adjectives masculines ou féminines – Les articles définis et indéfinis - Singuliers et pluriels

Unit III LEÇONS 4- 6 15

Leçons 4. L'heure, C'est l ;heure,- 5. Elle va revoir sa Normandie,- 6 .Mettez – vous d'accord groupe de nom - Réponses aux questions tirés de la leçon - Grammaire :Aplacer et accorder l'adjectif en groupe de nom- Préposition de lieu –A écrire les nombres et l'heure en français

Unit IV LEÇONS 7- 9 15

Leçons7. Trois visage de l'aventure,- 8. A moi, Auvergne,- 9. Recit de voyage - Réponses aux questions tirés de la leçon - Grammaire : Adjectif possessif – Les Phrases au Présent de l'indicatif - Les phrases avec les verbes pronominaux au présent

Unit V COMPOSITION 15

A écrire une lettre à un ami l'invitant à une célébration différente ex : mariage – A faire le dialogue - A lire le passage et répondre aux questions

TOTAL: 75 Hours

Text Book:

1. Méthode de Français PANORAMA », Jacky GIRARDER & Jean Marie GRIDLIG, Clé Internationale , Goyal Publication, New Delhi., Edition 2004

Reference Books:

1.DONDO Mathurin , “ Modern French Course”, Oxford University Press., New Delhi., Edition1997

2.Nitya Vijayakumar, “Get Ready French Grammar – Elementary”,Goyal Publications, NewDelhi., Edition 2010

(Syllabus for the I year II semester common to all UG courses)

Course Objective : To fortify the grammar and vocabulary skills of the students. Enable the students have an idea of the French Culture and Civilization

Unit I Leçons 10 – 11 **15**

Leçons : 10. Les affaires marchent,- 11. Un après midi à problèmes- Réponses aux questions tirés de la leçon - Grammaire : Présent progressif, passé récent ou future proche - Complément d'objet directe - Complément d'objet indirecte .

Unit II Leçons 12– 13 **15**

Leçons : 12. Tout est bien qui fini bien,- 13. Aux armes citoyens –Réponses aux questions tirés de la leçon - Grammaire :Les pronoms« en ou y » rapporter des paroles - Les pronoms relatifs que, qui, ou où

Unit III Leçons 14– 15 **15**

Leçons 14. Qui ne risqué rien n'a rien,- 15. La fortune sourit aux audacieux – Réponses aux questions tirés de la leçon - Grammaire : Comparaison– Les phrases au passé composé

Unit IV Leçons 16 –15 **15**

Leçons 16 La publicite et nos reves 17 La france le monde 15 Campagne publicitaire Réponses aux questions tirés de la leçon - Grammaire :- Les phrases à l' Imparfait - Les phrases au Future

Unit V Composition **15**

A écrire une lettre de regret// refus à un ami concernant l'invitation d'une célébration reçue- A écrire un essaie sur un sujet générale - A lire le passage et répondre aux questions

TOTAL: 75 Hours

Text Book :

1.« Méthode de Français PANORAMA », Jacky GIRARDER & Jean Marie GRIDLIG, Clé Internationale , Goyal Publication, New Delhi., Edition 2004

Reference Books:

1. “ Modern French Course, DONDO Mathurin, Oxford University Press, New Delhi., Edition 1997

2. Grammaire Française Facile, Paul Chinnappane, Saraswathi House Pvt Ltd, New Delhi, Edition 2010

(Syllabus for the II year - III semester common to all II B.Sc courses)

Course Objective : To strengthen the Grammar and Composition in French language. To train the students to enhance his skill in French language for communication

Unit I **15**

Leçon 16 - La famille Vincent (Page 44) - Grammaire : Passé composé

Leçon 29 - Vers l'hôtel (page 80) Grammaire : Impératif, A mettre les phrases du singulier au pluriel.

Unit II **15**

Leçon 40 - L'épicerie, les légumes et les fruits (page 112) – Grammaire: Présent de l'indicatif

Leçon 44 - La poste (page 124) – Grammaire : A mettre les phrases à l'imparfait

Unit III **15**

Leçon 51 - Le café et tabac (page 142) - Grammaire : A changer les phrases en Interrogatif

Leçon 58 - La Chasse et la pêche (160) - Grammaire : Le plus que parfait

Unit IV **15**

Leçon 61 - Un mariage à la campagne (page 170) - Grammaire – A changer au participe présent

Unit V **15**

Composition : A écrire une lettre à un ami l'invitant à une célébration différente ex : mariage – A faire un essai sur un sujet générale - A lire le passage et répondre aux questions

TOTAL : 75Hours

Text Book :

1. Les leçons ont été choisis et tirés de I & II degré de G .MAUGER « Cours de Langue et de Civilisation Française » The Millennium, Publication Hachette, Edition 2002

Reference Books :

1. Modern French Course, .DONDO Mathurin, Oxford University Press, New Delhi., Edition 1997
2. Saraswati Grammaire Française facile , Paul Chinnapan, Saraswathi House Pvt. Ltd., New Delhi., Edition 2010
3. Larousse French Grammar, . Larousse, Goyal Publication, New Delhi., Edition 1995

(Syllabus for the II year IV semester common to all II B.Sc courses)

Course Objective: To enable the students to strengthen their knowledge of grammar/composition To make the students to develop their skills of communication in French language

Unit I **15**

Leçon 20-Une grande Nouvelle (page56)– Grammaire : A mettre les phrases au Future Leçon 46. - Le métro ; l'autobus (page 130) -Grammaire :A former ou à changer l'adjectif masculin ou féminin à l'adverbe - Atrouver les noms qui correspondent aux verbes

Unit II **15**

Leçon 48. - A la Préfecture de police (page 132) - Grammaire : Les Pronoms relatifs
Leçon 63 - Les sports (page 174) Grammaire : Le conditionnel présent

Unit III **15**

Leçon 56 - A Biarritz, la plage (page 156) - Grammaire : Le future antérieure
Leçon 57 - Dans les Pyrénées (page 158) -Grammaire : Le future antérieure suite)

Unit IV **15**

Leçons 65-A fin des vacances (page178)Grammaire : A changer les phrases du pluriel - au singulier - Le présent du subjonctif

Unit V **15**

Composition :A écrire une lettre de regret / refus à un ami concernant l'invitation d'une célébration reçue- A écrire un essaie sur un sujet générale - A lire le passage et répondre aux questions

TOTAL : 75Hours

TextBook :

1. Les leçons ont été choisis et tirés de I & II degré de G. MAUGER « Cours de Langue et de Civilisation Française » The Millennium, Publication Hachette, Edition 2002

Reference Books:

1. "Modern French Course", DONDOMathurin, Oxford University Press, New Delhi., Edition 1997
2. « Saraswati Grammaire Française facile », Paul Chinnapan, Saraswathi House Pvt. Ltd., New Delhi., Edition 2010
3. "Larousse French Grammar", Larousse, Goyal Publication, New Delhi.,

(Syllabus for the I year I semester Common to all UG courses)

Course objective: To train the students in the use of Karyalayin Basha. To enable the students to develop the communication skill in Hindi language.

Unit I GADYA AUR KARYALAYIN BASHA 15

Mamata -Yogyatha Evam Vyavasay Kaa Chunaav Paribashik Shabdavalil Prashasanik Vakyansh,Padanam.

Unit II GADYA AUR SARKARI PATRA 15

Rajneethi Kaa Bhantwara, , Samanya Sarkari Patra,Gyapan,Karyalay Gyapan.

Unit III GADYA AUR SARKARI PATRA 15

Computer Nayi Krantee Kee Dastak, , Karyalay Aadesh,Ardha Sarkari Patra Paripatra,Adhisoochana.

Unit IV GADYA AUR SAMANYA PATRA 15

Raspriya, Samanya Patra- Chutti Patra,Sampadak Ke Naam Patra, Shikayati Patra,Pustak Vikretha Ke Naam Patra.

Unit V VYAVASAAAYIK PATRA 15

Bankon Mein Bach Khaata Kholne Ke Liye – Chek Buk Ke Liye, Run Lene Hetu, Chek Buk Gum Ho Jane Hetu, Kitaabon Kaa Krayadesh.

TOTAL: 75 Hours

Text Book:

1. Gadya Aur Prayojanmulak Hindi Ed By Dr.N.Lavanya Mayura Publishers, Edition.2008.

(Syllabus for the I year II semester common to all UG courses)

Course Objective: To enable the students to have the knowledge in contemporary literature of the modern era. It also provides an idea how translation to be effected.

Unit I KAHANI AUR EKANKI	15
Poos Kee Raat., - Duzhazar	
Unit IIEKANKI AUR KAHANI	15
Vaapasi,Akeli, .Akbhari Vigyapan	
Unit III :KAHANI AUR ANUVAD	15
Sharandatha - Anuvad Anuched Angreji Se Hindi Me Karne Ke Liye.	
Unit IVEKANKI AUR ANUVAD	15
Raat Ke Raahi Main Bhi Maanav HoonAnuvad Anuched Angreji Se Hindi Me Karne Ke Liye.	
Unit VKAHANI ,EKANKI AUR ANUVAD	15
Parda -Yeh Meri Janma Bhoomi Hai -Anuvad Anuched Angreji Se Hindi Me Karne Ke Liye.	

TOTAL: 75 Hours

Text Book:

- 1.Sankalan Kahani Evam Ekankied By Dr.N.Lavanya, Mayura Publishers Edition 2010

(Syllabus for the II year III semester common to all B.Sc courses)

Course objective: To help the students to have in depth knowledge of Literature. It makes the students to acquire more about the medieval period through the literary works.

Unit 1 PRACHIN KAVYA HINDI SAHITYA KA ITIHAS 15

Kabir- Hindi bash aka vikas – Hindi sahitya kaa aavirbahv

Unit II PRACHIN KAVYA HINDI SAHITYA KA ITIHAS 15

Surdaas, Tulsidass. Hindi sahitya kaa kaal vibhajan, aadikal, kaa Parichay

Unit III PRACHIN KAVYA HINDI SAHITYA KA ITIHAS 15

Rahim, aadikaal kaa namkran, paristhitiyan, racha evam rachnaakar

Unit IV BHAKTI KAAL, REETHI KAA 15

Bhakti kal kaa vibhajan paristhitiyan- racha evam rachnaakar - Reethikal ke prakaar, rachna evam rachnakar.

Unit V PRACHIN KAVYA EVAM RACHNAKARON KAA PARICHAY 15

Bihari - Chandbardayee, Ameerkhusaro, Kabir, Surdas, Tulsidas Jaayasi, Kesahv das Bhushan,

TOTAL: 75 Hours

Text Book:

1. Prachin evam Aadhunik Kavya Sankalan ed by Dr.N.Lavanya, Mayura Publishers, Edition 2011.

Reference Books:

1. Hindi Sahitya kaa Itihas, By Dr.Nagendra, Raj kamal Prakashan, 1997.

(Syllabus for the II year IV semester common to all B.Sc courses)

Course Objective: To enable the students to acquire knowledge in journalism so as to enhance his skill in effective communication pertaining to Hindi language.

Unit I AADHUNIK KAVITHA AUR RACHNAAKAR **15**
Mythili Sharan Gupt-Apna Sansar, Aadhunik Rachnakar Hazaari prasad Diwedi, Mahaveer Prasad Diwedi

Unit II AADHUNIK KAVITHA AUR RACHNAAKAR **15**
Jayashankar Prasad Kamayani - Chinta, Aadhunik Hindi Rachanakar Premchand, Jainendra

Unit III AADHUNIK KAVITHA AUR PATRAKARITHA **15**
Mahadeviverma, Murjaya PhoolBhavani Prasad Mishra Patrakarita – paribhasha, arth, prakar, swaroop.

Unit IV AADHUNIK KAVITHA, PATRAKARITHA AUR RACHNAKAR **15**
Mukthibodh Tum Logoan se door, Shamsher Bhadur Singh – Bharat kee aarathi, Vigyapan- sampadan kala, -Nirala, -Pant- Mohan Rakesh.

Unit V Aadhunik kavitha , Patrakaritha aur Rachnakar **15**
Prabhakar Machve Nimna Mdhya varg, **Patrakaritha-** samachar sankalan - Peeth patrakarita, Rachnakaar - Fanishwaranath renu -Mannu bhandari, Bhagawaticharan Verma, Yashpal .

TOTAL: 75Hours

Text Book:

1. Prachin evam Aadhunik Kavya Sankalan ed by Dr.N.Lavanya, Mayura Publishers, Edition 2011.

Reference Book:

1. Patrakaritha Ek Paricahy by Dr.Madhu Dhawan, Bodh Prakashan, Edition 1997.

Course Objective: To enable the students to develop their communication skills effectively. To make students familiar with the English Language. To enrich vocabulary in English. To develop communicative competent.

UnitI DETAILED POEMS I **15**

1. On His Blindness - John Milton
2. The Village Schoolmaster - Oliver Goldsmith
3. The Daffodils - William Wordsworth

Unit II DETAILED POEMS II **15**

4. Night and Death - Joseph Blanco White
5. The Ballad of Father Gilligan - W.B. Yeats

Unit III PROSE **15**

1. Martin Luther King Jr. - Coretta s King
2. Albert Schweitzer - Norman Wymar
3. Stanley Finds Livingstone - Lawrence Wilson
4. Srinivasa Ramanujan - C.P. Snow
5. My Days - R.K. Narayan

Unit IV GRAMMAR **15**

1. Articles
2. Prepositions
3. Tenses
4. Wh - Questions
5. Synonyms and Antonyms
6. One Word Substitution

Unit V COMPOSITION

15

7. Reading Comprehension
8. Filling up Forms
9. Railway Reservation/ Cancellation Forms
10. Bank-Chalan
11. Convocation Form
12. Money Order Form

TOTAL: 75 Hours

Text Book:

1. Empower with English, Sun Beams – 1, Mahadevan, Usha, Emerald Pub: Chennai. 2012. Print.

15LEN002

ENGLISH – II

5 0 0 4

Course Objective: To enable the students to develop their communication skills effectively. To make students familiar with the English Language. To enrich vocabulary in English. To develop communicative competent.

Unit I PROSE-I **15**

1. On Saying ‘Please’ - A.G. Gardiner
2. Women, Not the Weaker Sex - M.K. Gandhi
3. The Sky is the Limit - Kalpana Chawla

Unit II PROSE-II **15**

4. Polluting the World - Edgar I. Baker
5. Dimensions of Creativity - Dr. A. P. J. Abdul Kalam
6. The Message of Visva – Bharati

Unit III SHORT STORIES **15**

1. Open Window - H. H. Munro (Saki)
2. The Lion’s Share - Arnold Bennett
3. The Sparrows - K.A. Abbas
4. The Cop and The Anthem - O- Henry
5. The Necklace - Guyde Maupassant

Unit IV FUNDAMENTAL GRAMMAR SKILLS **15**

1. Question Tags
2. Concord
3. Reported Speech
4. Idiom and Phrases

Unit V ADVANCED GRAMMAR SKILLS **15**

5. Conditional Clauses
6. Cause and Effect
7. Simple, Complex, Compound
8. Framing Questions

TOTAL: 75 Hours

Text Book:

1..Empower with English,Sun Beams – II, Rao,Shoba B Emerald Pub:Chennai.2012.Print.

15LEN003

ENGLISH – III

5 0 0 4

Course Objective: To train the students in the use of the english language in varied literary and non literary context. To teach them soft skills and strength their foundation in grammar and composition. To elevate their comprehension skills.

Unit I PROSE I **15**

1. Spoon Feeding - W. R. Inge
2. Reading for Pleasure - L. A. G. Strong
3. The Challenge of our Time - E. M. Forster

Unit II PROSE II **15**

4. Human Values in Education - V. K. Gokak
5. Human Rights - Sivagami Paramasivam

Unit III SHORT STORIES **15**

1. Comrades - Nanine Gordimer
2. Games at Twilight - Anita Desai
3. The Gateman's Gift - R.K. Narayan

Unit IV PRIMARY COMPOSITION EXERCISES **15**

1. Letter Writing
2. Comprehension

Unit V ADVANCED COMPOSITION EXERCISES **15**

3. Precis-Writing
4. Resume Writing
5. Report Writing

TOTAL: 75 Hours

Text Books:

1. Words of Wisdom. An Anthology of Modern Prose, Dr. S.Subramanian, AnuChitra Pub., Chennai. 2003. P.
2. Gifts to Posterity. An Anthology of Modern Short Stories Dr. S.Subramanian, AnuChitra Pub., Chennai. 2003. P.

Course Objective: To train the students in the use of the english language in varied literary and non literary context. To teach them soft skills and strength their foundation in grammar and composition. To elevate their comprehension skills.

Unit I PROSE I	15
1. The Complete Man - Prince Philip	
2. Try Prayer Power - Norman Vincent Peale	
3. On Not Answering The Telephone - W. Plomer	
Unit II PROSE II	15
4. Science, humanities and religion - S. Radhakrishnan	
5. The Reason - E. V. Lucas	
Unit III SHORT STORIES	15
1. The Ant and the Grasshopper - W. Somerset Maugham	
2. How much land does a man need - Leo Tolstoy	
3. The Dying Detective - Sir Arthur Conan Doyle	
Unit IV PRIMARY COMPOSITION EXERCISES	15
1. Business Letters	
2. Hints Development	
Unit V ADVANCEDCOMPOSITION EXERCISES	15
3. Paraphrasing	
4. Writing Abstract	
5. Dialogue Writing	

TOTAL: 75 Hours

Text Books:

1. Words of Wisdom. An Anthology of Modern Prose, Dr. S. Subramanian, Anu Chitra Pub., Chennai. 2003. P.
2. Gifts to Posterity. An Anthology of Modern Short Stories, A.E.Subramanian, Anu Chitra Pub., Chennai. 2003. P

Unit I INTRODUCTION 7

The multidisciplinary nature of Environment of studies – Definition - Scope and Importance - Need for Public Awareness.

Unit II NATURAL RESOURCES 7

Natural resources and associated problem - Renewable and Non- Renewable resources:-Forest Resources-Mineral Resources-Food Resources - Energy Resources-Land Resources; Role of an individual in conservation of natural resources- Equitable use of resources of sustainable lifestyles.

Unit III ECO SYSTEM 7

Concepts of an Ecosystem - Structure and Functions of an Ecosystem - Procedures, Consumers and Decomposers - Energy flow in the ecosystem - Food chains, Food webs and ecological pyramids - Introduction, types, Characteristics features - Structures and functions of the following ecosystem :Forest ecosystem, Grass land ecosystem, Desert ecosystem, Aquatic ecosystem.

Unit IV BIODIVERSITY AND ITS CONSERVATION 8

Introduction - Definition, genetic, species and ecosystem diversity - Bio-geographical classification of India - Value of Bio-diversity - Bio-diversity at global, National and Local levels - India s a mega-diversity nation - Hot-Spots of diversity - Threats to diversity: Habitats loss, poaching of Wild life, man wild life conflicts - Endangered and Endemic species of India In-Situ conversation of Bio-diversity.

Unit V ENVIRONMENTAL POLLUTION AND HUMAN RIGHTS 7

Definition - Causes, effects and control measures of : Air pollution, Water pollution, Soil pollution, Marine pollution, Noise pollution, Thermal pollution, Nuclear pollution - Soil pollution management: Causes, effects and control measures of urban and industrial wastes - Role of an individual in prevention of pollution - Pollution – Case studies -Disaster Management – Flood, earthquakes, cyclone of landslidesEnvironment and human health - Human rights - Value education - HIV/AIDS - Women and child welfare - Role of information technology in Environment and Human health - Case study

TOTAL: 36 Hrs

Text Book:

1. Text Book Of Environmental Engineering, R. Venugopala Rao, Eastern Economy Edition.

Reference Books:

1. Environmental studies, Dr. N. Arumugam, Prof.V. Kumaresan.
2. Environmental studies, Thangamani & Shyamala Thangamani.

Syllabus

Skill Enhancement Courses (SEC)

Unit I ENVIRONMENT ISSUES	6
Environment conservation, enrichment and Sustainability - Climate change - Waste management - Natural resource management - (Rain water harvesting, energy conservation, waste land development, soil conservations and afforestation)	
Unit II DISASTER MANAGEMENT	6
Introduction to Disaster Management, classification of disasters - Role of youth in Disaster Management	
Unit III PROJECT CYCLE MANAGEMENT	6
Project planning - Project implementation - Project monitoring - Project evaluation : impact assessment	
Unit IV DOCUMENTATION AND REPORTING	6
Collection and analysis of data - Preparation of documentation/reports - Dissemination of documents/reports	
Unit V PROJECT WORK/ PRACTICAL	6
Workshops/seminars on personality development and improvement of communication skills.	

TOTAL: 30Hours

Text Books:

1. ChhatrapatiShahu – The Pillar of Social Democracy, Ed.P.B.Salunkhe
2. National Service Scheme Manual, Govt.of India.

Reference Books:

1. KapilK.Krishan, Social service opportunities in Hospitals, TISS
2. J.B.Reddy, Women and Law.

Course Objective: To Make Aware About The Importance Of Personality And Development In The Business World. To Make The Students Follow The Good Personality And Create A Good Relationship With Others.

Unit I PERSONALITY DEVELOPMENT-INTRODUCTION 6

The Concept Personality - Dimensions Of Personality - Term Personality Development - Significance. The Concept of Success and Failure What Is Success? - Hurdles In Achieving Success - Overcoming Hurdles - Factors Responsible For Success – What Is Failure - Causes Of Failure - Do's And Don'ts Regarding Success And Failure.

Unit II ATTITUDES AND VALUES 6

Attitude - Concept - Significance - Factors Affecting Attitudes - Positive Attitude - Advantages - Negative Attitude - Disadvantages - Ways To Develop Positive Attitude – Difference between Personalities Having Positive And Negative Attitude.

Unit III MOTIVATION 6

Concept of Motivation - Significance - Internal and External Motives - Importance of Self-Motivation- Factors Leading To Demotivation-Theories to Motivation

Unit IV SELF ESTEEM AND SMART 6

Term Self-Esteem - Symptoms - Advantages - Do's And Don'ts To Develop Positive Self-Esteem – Low Self-Esteem - Symptoms - Personality Having Low Self Esteem - Positive And Negative Self-Esteem. Interpersonal Relationships - Teaming - Developing Positive Personality - Analysis Of Strengths And Weaknesses. Concept of Goal-Setting - Importance Of Goals - Dream Vs Goal - Why Goal-Setting Fails? – Smart (Specific, Measurable, Achievable, Realistic, Time-Bound) Goals - Art Of Prioritization - Do's And Don'ts About Goals.

Unit V BODY LANGUAGE, STRESS MANAGEMENT & TIME MANAGEMENT 6

Body Language - Assertiveness - Problem-Solving - Conflict And Stress Management - Decision-Making Skills - Positive And Creative Thinking - Leadership And Qualities Of A Successful Leader - Character-Building - Team-Work - Lateral

Thinking - Time Management - Work Ethics – Management Of Change - Good Manners And Etiquettes (Concept, Significance And Skills To Achieve Should Be Studied.)

Topics Prescribed For Workshop/Skill Lab:

12

- A) Group Discussion
- B) Presentation Skill
- C) Problem-Solving
- D) Decision-Making
- E) Creativity
- F) Leadership
- G) Time Management
- H) Body Language

TOTAL: 30Hours

Text Books:

1. Organisational Behaviour - S P.Robbins - PHI Pvt. Ltd., New Delhi-15th edition,2013.
2. Communicate To Win- Richard Denny- Kogan Page India Pvt Limited, NewDelhi-2009
3. Essentials Of Business Communication - Rajendra Pal And J. S. Korlhalli - Sultan Chand & Sons, New Delhi,1st edition,2012

Reference Books:

- 1)BusinessCommunication-K.K.Sinha-GalgotiaPublishingCompany,NewDelhi.-
4thedition,2012
- 2)MediaAnd Communication Management- C.S.Rayudu - HPH,Bombay.2011
- 3)Business Communication - Dr. S.V.Kadvekar,Prin.Dr.C.N.Rawal&
Prof.RavindraKothavade - Diamond Publications, Pune.2009.
- 4) You Can Win - Shiv Khera - Macmillan India Limited.2012.
- 5) Group Discussion&Public Speaking-K.Sankaran&Mahendra Kumar-M.I.Publications,
Agra.2000
- 6) Basic Managerial Skills for All-PHI Pvt. Ltd., New Delhi-2011-E.H.mcgrath
- 7) 8 Habits - Stephen Covey-simon&schusker publisher-2007 edition.
- 8) Management Thoughts - Pramod Batra-HPB publisher-1st edition-2006
- 9) Produced By Prof. Rooshikumar Pandya - Creative Communication And Management
Center, Bombay-R&E publisher kindle edition-2012.
- A) Assertive Training: Four Cassettes-hannah Richards-2012
- B) Self Hypnosis for Goal Achievement: Four Cassettes-kindle edition-ryancooper-2012

Unit I INTRODUCTION 6

Why Value Education – Ethical Reflections – What is Ethics? Swami Vivekananda

Unit I I APPROACH TO LIFE 6

Approach to Life - Happiness as Goal - Historical Perspective – Life in the Past and Present

Unit II I KINDS OF VALUES 6

Kinds of Values S. Ignacimuthu S.J – Living Excellence Anthony Robbins – Concern for Others – Student’s Definition why Concern.

Unit IV GOALS AND HUMAN RIGHTS 6

Use Goals to help you grow David J. Schwartz – essential Characteristics of Human Rights.

Unit V INFLUENCE OF SCIENCE AND TECHNOLOGY IN HUMAN’S SOCIAL LIFE 6

Social Relevance of Science and Technology – Economic Awareness – Economic Features – Status of Women – Mass Media and Values.

TOTAL: 30Hours

Text Book:

1. Touchstone: Synergy of Values – University of Madras.

Reference Books:

2. In harmony- Value Education at College Level- Dept. of Ethics and Religious Studies Loyolla College, Madras.