



NAAC: B+(III Cycle - CGPA 2.60)

Estd: 1937

SRR & CVR GOVT. DEGREE COLLEGE (Autonomous)

VIJAYAWADA – 520 004 :: KRISHNA DISTRICT:: ANDHRA PRADESH

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Date: 23-03-2018

Department of Computer Science

Minutes of the meeting of Board of Studies in Computer Science held on 23/03/2018 at 1.00 pm in Computer Science Department.

Members Present

DEPARTMENT OF COMPUTER SCIENCE

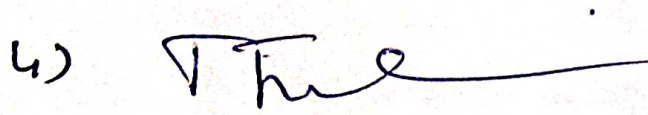
- | | |
|----------------------------|---|
| 1. T.Jaya Krishna | Chairman, Dept of Computer Science |
| 2. Dr. R. Kiran Kumar | University Nominee, Krishna University |
| 3. Dr. K.B.S Sastry | Subject Expert, Andhra Loyola College, Vijayawada Krishna Dist |
| 4. Sri K.Sridhar | Subject Expert, P.B.Siddartha College of Arts&Science, Vijayawada |
| 5. Sri. KVLN Prasad | Member |
| 6. Sri. Ch. Raja Sekhar | Member |
| 7. Sri. G.Sridhar | Member |
| 8. Sri MVS Sharma | Member |
| 9. Sri. M. Srihari Krishna | Industry Member |
| 10. Sri. B. Nani | Alumni Member |

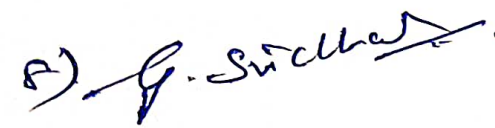
Resolutions

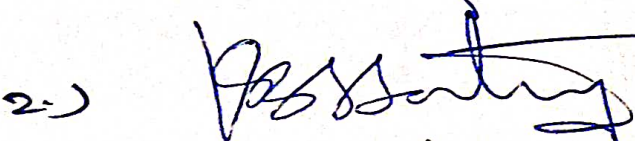
1. It was unanimously resolved to introduce new curriculum for Computer Science students of B.Sc. (MECS, MSCS, MPCS) w.e.f. 2018 – 2019 academic year. The new curriculum and syllabus for III Sem and IV Sem only are furnished in Appendix – I.
2. It was unanimously resolved introduce new curriculum for students of B.Sc. (MPM) w.e.f. 2018 – 2019 academic year. The new curriculum and syllabus for III Sem and IV Sem only are furnished in Appendix-II.
3. It was unanimously resolved to introduce new curriculum for B.Com(Computer Applications) w.e.f 2018-2019 and the syllabus for III Sem and IV Sem only are furnished in Appendix - III. Specified by Krishna University.
4. It was unanimously resolved to teach ICT-2 as foundation course for all groups in III Semester and the syllabus is furnished in Appendix-IV.
5. It was unanimously resolved to conduct examinations **Internal 40 marks** and **External 60 marks** in both B.Sc (Computer Science) ,B.Sc(MPM) and B.Com (Computer applications) subject as per instructions given by academic council of SRR & CVR Govt. Degree College.

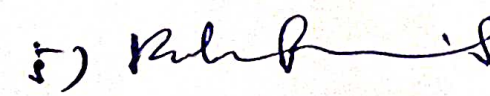
Signatures:

1.)  23/3/2018

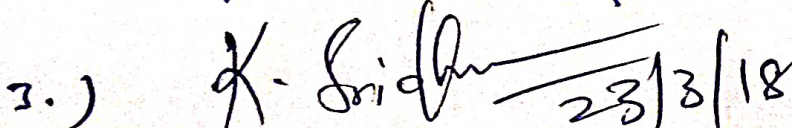
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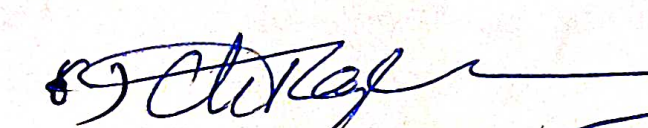
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3.)  23/3/18

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10.)

7.)  23/3/18

6. 60 marks in **External assessment** is divided as

- a. 20 marks in **Section A** and
- b. 40 marks in **Section B**

40 marks in **Internal Assessment** is divided as

- c. 10 marks for Assignment,
- d. 5 marks for Viva/Assessment,
- e. 5 marks for Seminars,
- f. 10 marks for Project work and
- g. 10 marks for the Best of the two mid exams

7. The HOD has to prepare the list of Examiners and Paper Setters and will be submitted to the Academic Council

8. The committee has approved the syllabus with **5 Units for each Semester** i.e., Semester-III and Semester-IV

9. The committee has approved the Model Question Paper for external exams - 60 marks and is divided as follows,

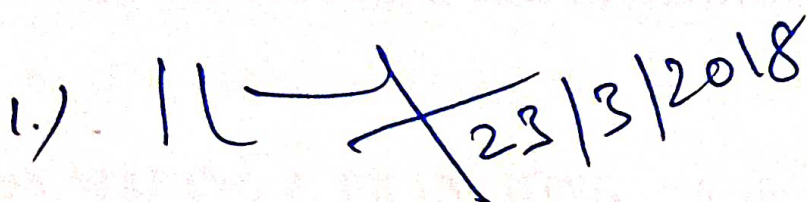
- a. In Section A, answer **any 5** out of 10 Questions. Each one carries **4 marks**, totaling to **20 marks**. 2 questions have to be selected From each of the five units
- b. In Section B, answer **all 5** questions. Each question has internal choice. Each question carries **8 marks** totaling to **40 marks**. Each question has to be selected from each unit/Module.

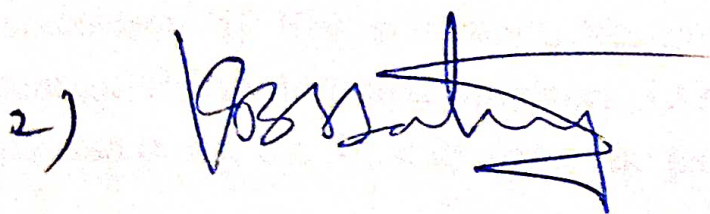
10. The committee has approved the Blue Print of the question paper. Question paper has to be designed in such a way that **12 marks have to be obtained from each unit/Module.**

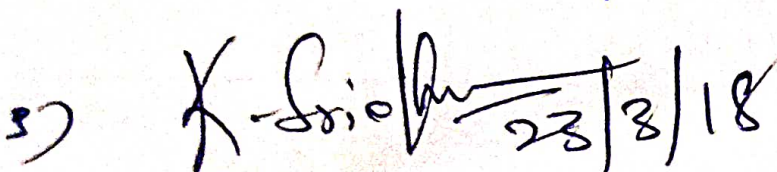
11. Modifications, if need be in the above resolutions, will be done by the HOD and the faculty members of the department.


12. The committee has approved that all the above resolutions will be effective for **three years** i.e., 2017-18, 2018 -19, 2019-20 academic years

Signatures:

1.)  23/3/2018

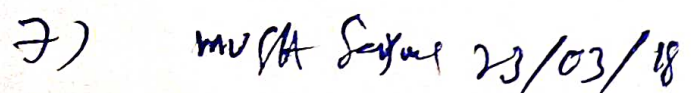
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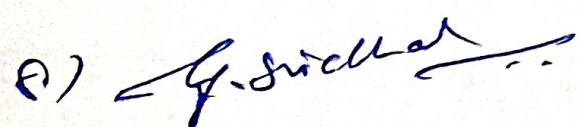
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9.)

Structure of Computer Science Syllabus

II YEAR III SEMESTER

Paper-III : OBJECT ORIENTED PROGRAMMING USING JAVA

Course Objectives

As the business environment becomes more sophisticated, the software development (software engineering is about managing complexity) is becoming increasingly complex. As of the best programming paradigm which helps to eliminate complexity of large projects, Object Oriented Programming (OOP) has become the predominant technique for writing software in the past decade. Many other important software development techniques are based upon the fundamental ideas captured by object-oriented programming.

Course Outcomes

At the end of this course student will:

1. Understand the concept and underlying principles of Object-Oriented Programming
2. Understand how object-oriented concepts are incorporated into the Java programming language
3. Develop problem-solving and programming skills using OOP concept
4. Understand the benefits of a well structured program
5. Develop the ability to solve real-world problems through software development in high-level programming language like Java
6. Develop efficient Java applets and applications using OOP concept
7. Become familiar with the fundamentals and acquire programming skills in the Java language.

UNIT-1

FUNDAMENTALS OF OBJECT – ORIENTED PROGRAMMING :Introduction, Object Oriented paradigm, Basic Concepts of OOP, Benefits of OOP, Applications of OOP, Java features: **OVERVIEW OF JAVA LANGUAGE**: Introduction, Simple Java program structure, Java tokens, Java Statements, Implementing a Java Program, Java Virtual Machine, Command line arguments. **CONSTANTS, VARIABLES & DATA TYPES**: Introduction, Constants, Variables, Data Types, Declaration of Variables, Giving Value to Variables, Scope of variables, Symbolic Constants, Type casting, Getting Value of Variables, Standard Default values; **OPERATORS & EXPRESSIONS**.

UNIT-II

DECISION MAKING & BRANCHING: Introduction, Decision making with if statement, Simple if statement, if. Else statement, Nesting of if. else statements, the else if ladder, the switch statement, the conditional operator. **LOOPING**: Introduction, The While statement, the do-while statement, the for statement, Jumps in loops.

Appendix - I

B.Sc. Computer Science / Information Technology (IT) Syllabus Under CBCS
w.e.f.2018-2019

Structure of Computer Science Syllabus

CLASSES, OBJECTS & METHODS: Introduction, Defining a class, Adding variables, Adding methods, Creating objects, Accessing class members, Constructors, Method overloading, Static members, Nesting of methods;

UNIT-III

INHERITANCE: Extending a class, Overloading methods, Final variables and methods, Final classes, Abstract methods and classes;

ARRAYS, STRINGS AND VECTORS: Arrays, One-dimensional arrays, Creating an array, Two – dimensional arrays, Strings, Vectors, Wrapper classes;

INTERFACES: MULTIPLE INHERITANCE: Introduction, Defining interfaces, Extending interfaces, Implementing interfaces, Assessing interface variables;

UNIT-IV

MULTITHREADED PROGRAMMING: Introduction, Creating Threads, Extending the Threads, Stopping and Blocking a Thread, Lifecycle of a Thread, Using Thread Methods, Thread Exceptions, Thread Priority, Synchronization, Implementing the 'Runnable' Interface.

MANAGING ERRORS AND EXCEPTIONS: Types of errors : Compile-time errors, Run-time errors, Exceptions, Exception handling, Multiple Catch Statements, Using finally statement,

UNIT-V

APPLET PROGRAMMING: local and remote applets, Applets and Applications, Building Applet code, Applet Life cycle: Initialization state, Running state, Idle or stopped state, Dead state, Display state.

PACKAGES: Introduction, Java API Packages, Using System Packages, Naming conventions, Creating Packages, Accessing a Package, using a Package.

MANAGING INPUT/OUTPUT FILES IN JAVA: Introduction, Concept of Streams, Stream classes, Byte Stream Classes, Input Stream Classes, Output Stream Classes, Character Stream classes: Reader stream classes, Writer Stream classes, Using Streams, Reading and writing files.

Appendix - I

B.Sc. Computer Science / Information Technology (IT) Syllabus Under CBCS

w.e.f.2018-2019

Structure of Computer Science Syllabus

II YEAR IV SEMESTER

Paper-IV : DATA STRUCTURES

Course Objectives

To introduce the fundamental concept of data structures and to emphasize the importance of data structures in developing and implementing efficient algorithms..

Course Outcomes

After completing this course satisfactorily, a student will be able to:

1. Describe how arrays, records, linked structures, stacks, queues, trees, and graphs are represented in memory and used by algorithms
2. Describe common applications for arrays, records, linked structures, stacks, queues, trees, and graphs.
3. Write programs that use arrays, records, linked structures, stacks, queues, trees, and graphs
4. Demonstrate different methods for traversing trees
5. Compare alternative implementations of data structures with respect to performance
6. Compare and contrast the benefits of dynamic and static data structures implementations
7. Describe the concept of recursion, give examples of its use, describe how it can be implemented using a stack .
8. Discuss the computational efficiency of the principal algorithms for sorting, searching, and hashing.

UNIT I

Concept of Abstract Data Types (ADTs)- Data Types, Data Structures, Storage Structures, and File Structures, Primitive and Non-primitive Data Structures, Linear and Non-linear Data Structures.

Linear Lists – ADT, Array and Linked representations, Pointers.

Arrays – ADT, Mappings, Representations, Sparse Matrices, Sets – ADT, Operations

Linked Lists: Single Linked List, Double Linked List, Circular Linked List , applications

UNIT II

Stacks: Definition, ADT, Array and Linked representations, Implementations and Applications

Queues: Definition, ADT, Array and Linked representations, Circular Queues, Dequeues, Priority Queues, Implementations and Applications.

UNIT III

Appendix - I

B.Sc. Computer Science / Information Technology (IT) Syllabus Under CBCS
w.e.f.2018-2019

Structure of Computer Science Syllabus

Trees: Binary Tree, Definition, Properties, ADT, Array and Linked representations, Implementations and Applications. Binary Search Trees (BST) – Definition, ADT, Operations and Implementations, BST Applications. Threaded Binary Trees, Heap trees.

UNIT IV

Graphs – Graph and its Representation, Graph Traversals, Connected Components, Basic Searching Techniques, Minimal Spanning Trees,

UNIT- V

Sorting and Searching: Selection, Insertion, Bubble, Merge, Quick, Heap sort, Sequential and Binary Searching., **Radix Sort algorithm**

REFERENCE BOOKS

1. D S Malik, Data Structures Using C++, Thomson, India Edition 2006.
2. Sahni S, Data Structures, Algorithms and Applications in C++, McGraw-Hill, 2002.
3. SamantaD, Classic Data Structures, Prentice-Hall of India, 2001.
4. Heilman G I,. Data Structures and Algorithms with Object-Oriented Programming, Tata McGraw-Hill. 2002. (Chapters I and 14).
5. Tremblay P, and Sorenson P G, Introduction to Data Structures with Applications, Tata McGraw-Hill,

Student activity:

1. Create a visible stack using C-graphics
2. Create a visible Queue using C-graphics

Appendix- II

II YEAR III SEMESTER FUNDAMENTALS OF CREATIVE MULTIMEDIA

Total Contact Hours - 45

Prerequisite: NIL

PURPOSE:

The purpose of this course is to understand the various concepts of compression methods, hardware and software used in multimedia and to get familiar with the various file formats used in multimedia.

INSTRUCTIONAL OBJECTIVES:

1. To understand Multimedia hardware and software
2. To understand Multimedia system architecture
3. To understand various compression techniques
4. To understand various file formats
5. To understand storage media

UNIT I – Multimedia System Design: An Introduction Multimedia Elements, Multimedia Applications, Multimedia System Architecture, Evolving Technologies for Multimedia Systems, Multimedia Databases

UNIT II – Compression and Decompression Techniques, Types of Compression, Binary Image Compression Schemes, Color, gray scale, still-video image compression, Discrete Cosine Transform, Video Image compression, MPEG Coding methodology, Audio Compression, Data and File format standards- RTF, TIFF, RIFF, MIDI, JPEG, AVI, JPEG, TWAIN Architecture.

UNIT III – MULTIMEDIA INPUT AND OUTPUT TECHNOLOGIES

Key Technology Issues, Pen Input, Video and Image Display Systems, Print Output Technologies, Image Scanners, Digital Voice and Audio, Video Images and Animation, Full Motion Video.

UNIT IV – STORAGE AND RETRIEVAL TECHNOLOGIES

Magnetic Media Technology, RAID-Level-0 To 5, Optical Media, WORM optical drives, Hierarchical Storage Management, Cache Management for storage systems.

UNIT V – MULTIMEDIA APPLICATION DESIGN

Types of Multimedia systems - Virtual Reality Design - Components of Multimedia system - Distributed Application Design Issues - Multimedia Authoring and User Interface - Hypermedia Messaging – Distributed Multimedia Systems

REFERENCES

1. Andleigh PK and Thakrar K, "Multimedia Systems", Addison Wesley Longman, 1999.
2. Fred Halsall, "Multimedia Communications", Addison Wesley, 2000.
3. Ralf Steinmetz, Klara Nahrstedt, "Multimedia, computing, communications and applications", Prentice Hall, 1995.
4. Tay Vaughan, "Multimedia making It work", TMH 5th Edition 2001.
5. Weixel, Fulton, Barksdale.Morse, "Multimedia Basics", Easwar Press 2004.

Appendix- II

II YEAR IV SEMESTER

Digital Publishing

Total contact hours – 40 + 30 = 75

PURPOSE

Adobe Photoshop is the premiere image manipulation tool for print design, Web design, and photography. It's a must-know if you're planning to work with photos or design projects at any level.

INSTRUCTIONAL OBJECTIVES:

- Use basic selection tools and edge refinement to isolate and edit parts of an image.
- Manipulate layers through ordering, positioning, scaling, rotation, and adjustments.
- Create composite images that demonstrate advanced selection and layering techniques.
- Prepare images for Web and print output with appropriate sizing and resolution.
- Apply painted masks, selection-based masks, gradient masks, and blend modes to create sophisticated image effects.
- Create adjustment layers for editable, non-destructive changes to image coloration and exposure.
- Set and modify typography using the full range of type tools, the Character panel, and the Paragraph panel.
- Apply special effects to typography using masks, paths, and layer styles.

Unit I

(9 Hours)

Meaning, Definition and history of digital publishing, Types of digital publishing, Careers in digital media

Unit-II

(9 Hours)

Digital printing process Understanding hidden character, How indesign defines Paragraph, Manage Hyphenation settings, Apply Alignment settings, Balanced Ragged lines, Hang punctuation, Hyphen and Dashes

Unit III

(9 Hours)

Concept of digital publishing, the Indesign workspace., Menu bar, toolbox, using panels, using tools, placing text in a frame, Navigation, Application bar, control panel, using the control panel to change typefaces, changing leading, Type Basics, Points, Picas & Markup, working with text in a frame, using the glyphs panel. Combining type and images: Understanding paths and selection tools, working with text, placing text, Manage text flow, threaded text frame, check spelling, kerning, working with images.

Appendix- II

Unit-IV

(9 Hours)

Tabs and Tables: Working with tabs, setting tabs, Creating tables, Create a table from existing text, Adding Headers and Footers, guides & columns, Using grids to align objects. Text Wrap, Layers, Effects: Integrating Text & graphics, an introduction to text wrap, an Introduction to document layers.

Unit - V

(9 Hours)

Placing type on a closed shape, placing type on an open paths, create text outlines, creating shaped text frames, specifying color, applying color to your documents, graphics tool, the mighty pen tool, making closed and paths.

Practical

(30 Hours)

Reference Books

1. Steve Johnson, Adobe InDesign CS5 on Demand Publisher Pearson Education, Limited, 2010 ISBN 0789744465, 9780789744463
2. Christopher Smith, InDesign CS5 Digital Classroom Publisher John Wiley & Sons, 2010, ISBN 0470607815 , 9780470607817 Terry Rydberg ,Exploring Adobe InDesign CS5
3. Anne Fisher, Adobe Indesign Cs5 Illustrated ISBN-13978-0-538-47787-1
4. David Bergsland, Publishing with Indesign CS5 third edition
5. Burke,S. Paraiiah, Mastering InDesigh CS5 for print design and production Gruman Galen, InDesign CS5 For Dumies

Appendix - III
SRR & CVR Govt. Degree College (Autonomous) – VIJAYAWADA
Second Year B.Com (Computer Applications-E.M) – Third Semester
DSC 3C-Office Automation Tools
Syllabus

Unit-I: MS-Excel: features of Ms-Excel, Parts of MS-Excel window, entering and editing data in worksheet, number formatting in excel, different cell references, how to enter and edit formula in excel, auto fill and custom fill, printing options.

Unit-II: Formatting options: Different formatting options, change row height, formulae and functions, **Functions:** Meaning and advantages of functions, different types of functions available in Excel.

Unit-III: Charts: Different types of charts, Parts of chart, chart creation using wizard, chart operations, data maps, graphs, data sorting, filtering. Excel sub totals, scenarios, what-if analysis **Macro:** Meaning and advantages of Macros, creation, deletion of macros - Creating a macro, how to run, how to delete a macro. Create a worksheet to prepare a monthly expenditure of your home.

Unit-IV: MS Access: Creating a Simple Database and Tables: Features of Ms-Access, Creating a Database, Parts of Access. **Tables:** table creation using design view, table wizard, data sheet view, import table, link table. **Forms:** The Form Wizard, design view, columnar, tabular, data sheet, chart wizard.

Unit- V: Finding, Sorting and Displaying Data: Queries and Dynasets, Creating and using select queries, Returning to the Query Design, Multi-level sorts, Finding incomplete matches, showing All records after a Query, saving queries - Crosstab Queries. **Printing Reports:** Form and Database Printing.

Reference Books:

1. Ron Mansfield, Working in Microsoft Office, Tata McGraw Hill(2008)
2. Ed Bott, Woody Leonhard, Using Microsoft Office 2007, Pearson Education(2007)
3. Sanjay Saxsena, Microsoft Office, 4. Microsoft Office, BPB Publications

Appendix - III
SRR & CVR Govt. Degree College (Autonomous) – VIJAYAWADA
Second Year B.Com (Computer Applications-E.M) – Fourth Semester
DSC 3D Business Analytics
Syllabus

Unit-I: **Introduction** - Business Analytics Life Cycle - Business Analytics Process - Data concepts – Data exploration & visualization - Business Analytics as Solution for Business Challenges -

Unit-II: **Automated Data Analysis:** Tabulation and Cross Tabulation of Data: Univariate, Bivariate and Multivariate Data Analysis – ANOVA.

Unit-III: **Hypothesis Testing:** Type 1 & 2 errors - T-test, ANOVA, Chi-Square and correlation - Linear Regression Analysis - Logistic Regression - Cluster Analysis - Market Basket Analysis.

Unit-IV: **Business Data Management:** Master Data Management: Data Warehousing and kinds of Architecture – Data Extraction – Transformation and Up-loading of Data – Data Mining – Meta Data – Data Marts – Creating Data Marts – Data Integration – OLTP and OLAP.

Unit-V: **SPSS Packages** – Applications and Case Studies.

Suggested Books:

1. Gupta S.P. "Statistical Methods", Sultan Chand, New Delhi, 2010.
2. K.V. Rao, "Research Methodology in Commerce and Management", Sterling Publishers, New Delhi, 2012.
3. T.S. Wilkinson & P.L. Bhandarkar, "Methodology and Techniques of Social Research", 2010.
4. Richard A. Johnson & Dean W. Wichern, "Applied Multivariate Statistical Analysis", Prentice Hall International Inc., 2007.
5. R.N Prasad and Seema Acharya, "Fundamentals of Business Analytics", Wiley India Publication.
6. Pang-Ning Tan, Michael Steinbach & Vipin Kumar, "Introduction to Data Mining", Pearson, 2009.
7. Alex Berson, Stephen Smith & Kurt Thearling, "Building Data Mining Application for CRM", Tata McGraw Hill, New Delhi, 2000.

Appendix-IV

Foundation Course - 5 :: Common for B.A / B.Com / B.Sc / B.B.A Programmes

INFORMATION & COMMUNICATION TECHNOLOGY –2 (ICT-2)

III Semester :: Internet Fundamentals and Web Tools

Unit-I: Fundamentals of Internet : Networking Concepts, Data Communication – Types of Networking, Internet and its Services, Internet Addressing – Internet Applications – Computer Viruses and its types – Browser –Types of Browsers.

Unit-II: Internet applications: Using Internet Explorer, Standard Internet Explorer Buttons, Entering a Web Site Address, Searching the Internet – Introduction to Social Networking: twitter, tumblr, LinkedIn, facebook, flickr, skype, yelp, vimeo, yahoo!, google+, youtube, WhatsApp, etc.

Unit-III: E-mail :Definition of E-mail - Advantages and Disadvantages – UserIds, Passwords, Email Addresses, Domain Names, Mailers, Message Components, Message Composition, Mail Management, Email Inner Workings.

Unit IV: WWW- Web Applications, Web Terminologies, Web Browsers, URL – Components of URL, Searching WWW – Search Engines and Examples

Unit-V: Basic HTML: Basic HTML – Web Terminology – Structure of a HTML Document – HTML, Head and Body tags – Semantic and Syntactic Tags – HR, Heading, Font, Image and Anchor Tags –Different types of Lists using tags – Table Tags, Image formats – Creation of simple HTML Documents.

Reference Books :

1. In-line/On-line : Fundamentals of the Internet and the World Wide Web,

2/e - by Raymond Greenlaw and Ellen Hepp, Publishers : TMH