ಮೈಸೂರು ವಿಶ್ವವಿದ್ಯಾನಿಲಯ

University of Mysore
(Estd.1916)

ADVANCED DIPLOMA IN INFORMATION TECHNOLOGY

Choice Based Credit System (CBCS)

Programme Details

UNIVERSITY OF MYSORE
Centre for Information Science and Technology
Manasagangotri, Mysuru-570006

Regulations and Syllabus

ADVANCED DIPLOMA IN INFORMATION TECHNOLOGY (ADIT)

Under

Choice Based Credit System (CBCS)

CHAIRMAN
BOS OF CIST COL
UNIVERSITY OF MYSORE
MGM - 6

UNIVERSITY OF MYSORE
GUIDELINES AND REGULATIONS
LEADING TO
ADVANCED DIPLOMA IN INFORMATION TECHNOLOGY
(ADIT)

Programme Details

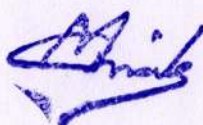|	
Name of the Department	: Centre for Information Science and Technology
Subject	: Diploma
Name of the Programme	: Advanced Diploma in Information Technology (ADIT)
Duration of the Programme	: 1 year

PROGRAMME SPECIFIC OUTCOMES

- Students will acquire the knowledge about the current technology, trends, tools, theory of Computer Science and software development concepts to develop applications and to identify the potential problems where creative computer-based solutions can be applied to solve the problems.

- Students will be successful software professionals in IT industry capable of assimilating new information and understanding new technology and its application domain to provide efficient and effective software solutions wherever possible.

- Students will inculcate the skills of communicating proficiently and collaborate successfully with peers, colleagues and organizations for higher studies, research and entrepreneurship to create new applications for the betterment of the society and their better future.

PROGRAMME PEDAGOGY

- The pedagogy involves meaningful incorporation of teaching and learning materials in addition to use of text books and reference works. It is needless to mention that the use of digital technology (ICT enabled teaching-learning) is a part of the pedagogy in this course.

ADVANCED DIPLOMA IN INFORMATION TECHNOLOGY (ADIT)

FIRST SEMESTER

Sl. No.	Code	Paper Tile	T	P	Credits
1	ADIT T-1.1	IT Tools and Business Systems	2	2	4
2	ADIT T-1.2	Programming In C	2	2	4
3	ADIT T-1.3	Basics of PC Maintenance	2	2	4
4	ADIT T-1.4	E Commerce	2	2	4
5	ADIT T-1.5	Digital Image Editing Using Photoshop	2	2	4

SECOND SEMESTER

Sl. No.	Code	Paper Title	T	P	Credits
1	ADIT T-2.1	Introduction to Multimedia	2	2	4
2	ADIT T-2.2	Business Data Processing	2	2	4
3	ADIT T-2.3	Web Programming Concepts	2	2	4
4	ADIT T-2.4	Object Oriented Programming with Java	2	2	4
5	ADIT T-2.5	Cyber Security	2	2	4

ADIT T-1.1: IT TOOLS AND BUSINESS
SYSTEMS COURSE OUTCOME:

- ✓ Understand the organization of basic computer, its design and the design of control unit.
- ✓ Demonstrate the working of central processing unit.
- ✓ Describe the operations and language f the register transfer, micro operations and input-output organization.
- ✓ Understand the organization of memory and memory management hardware.
- ✓ Elaborate advanced concepts of computer architecture, Parallel Processing, interprocessor communication and synchronization.

COURSE CONTENT:

UNIT-I:
Characteristics of Computers, Input, Output, Storage units, CPU, Computer System, Binary number system, Binary to Decimal Conversion, Decimal to Binary Conversion, ASCII Code, Unicode.

UNIT-II:
Central Processing Unit - Processor Speed, Cache, Memory, RAM, ROM, Booting, Memory- Secondary Storage Devices: Floppy and Hard Disks, Optical Disks CD-ROM, DVD, Mass Storage Devices: USB thumb drive. Managing disk Partitions, File System Input Devices - Keyboard, Mouse, joystick, Scanner, web cam, Output Devices- Monitors, Printers – Dot matrix, inkjet, laser, Multimedia- What is Multimedia, Text, Graphics, Animation, Audio, Images, Video; Multimedia Application in Education, Entertainment, Marketing. Names of common multimedia file formats, Computer Software- Relationship between Hardware and Software; System Software, Application Software, Compiler, names of some high level languages, free domain software.

UNIT-III:
Microsoft Windows- An overview of different versions of Windows, Basic Windows elements, File management through Windows. Using essential accessories: System tools – Disk cleanup, Disk defragmenter, Entertainment, Games, Calculator, Imaging –Fax.

UNIT-IV:

Notepad, Paint, WordPad. Command Prompt- Directory navigation, path setting, creating and using batch files. Drives, files, directories, directory structure. Application Management: Installing, uninstalling, Running applications. Linux- An overview of Linux, Basic Linux elements: System Features, Software Features, File Structure, File handling in Linux: H/W, S/W requirements, Preliminary steps before installation, specifics on Hard drive repartitioning and booting a Linux system.

REFERENCE BOOKS:

1. Computer Concepts Basics, Dolores J Wells, Publisher: Course Technology, Edition Number: 4 , ISBN: 1423904621,EAN: 9781423904625, Publish Date: 2008-12-31

2. Computer Concepts: Illustrated Brief, Dan Oja, ISBN: 0538749547, Edition: 8 , Publisher: Course Technology

3. Computer Concepts and C Programming, J B Dixit, ISBN: 8170081130 Publisher: Laxmi publications PVT.LTD

4. Computer Concepts and C Programming, Dr S Ravishankar , Publisher: Himalaya , Edition Number: 2 ,EAN: CHIMPUB110247

5. Computer Concepts & C Programming, Sangameshwara Bg, SANGUINE TECHNICAL PUBLISHERS, ISBN: 818884930

6. P.K. Sinha and P. Sinha, " Foundations of Computing" , BPB Publication, 2008.

7. Sagman S, "MS Office for Windows XP", Pearson Education, 2007.

8. ITL Educational Society, "Introduction to IT", Pearson Education, 2009.

9. Miller M, "Absolute Beginners Guide to Computer Basics", Pearson Education, 2009.

ADIT T-1.2: PROGRAMMING IN C

COURSE OUTCOME:

✓ Understand the basic concepts of data structures and their importance in solving a problem.

✓ Understand the classification of data structures, their merits, limitations and applicability in problem solving.

✓ Acquire the knowledge and skills of implementing various data structures to solve few specific problems.

COURSE CONTENT:

UNIT-I

C Language Preliminaries Introduction, History and features of C, Characteristics of C, Applications of C. Constants and Variables, Fundamentals of C, Variables, Constants, Data

Types, int, float, char, double. Input-Output statements, formatted input, formatted output statements, Unformatted input statements, unformatted outputstatements.

UNIT-II

Operators In C, C operators, unary operator, binary operator, arithmetic operator, increment operator, Decrement operator, relational operator, logical operator, bit wise operator, ternary Operator, comma operator, size of ()-operator, mathematical functions, header files, Preprocessor directives. Control Statements, Conditional control statements, if-statements, if- else statements, nested if- statements, Switch-statements, go to statement. Loop Control Structures, while statement, do-while statement, for statement, nested for statement, break Statement, continued statement.

UNIT-III

Arrays, Definition, classification of arrays, declaration of an array, One-dimensional array & Multidimensional arrays. Functions Function definitions, arguments and parameters, category of functions, function with No arguments and no return values, function with arguments but no return value, Functions with no arguments and return values, local and global variables. Pointers, Definition, call by value and call by reference, pointer declaration, and pointer notations. Strings, declaring and initializing string variables, reading and writing strings, string handling functions.

UNIT-IV

Structures And Unions, Definitions, declarations, embedded structure declarations, initialization of a Structure, array of structures, unions, definitions, declarations, accessing union Members,

and initialization. File operations, Data organization, file operations, opening a file, reading from a file, trouble in Opening a file, closing the file.

REFERENCE BOOKS:

1) The C Programming Language, B.W. Kernighan, Dennis M.Ritchie, PHI/Pearson Education
2) Computer Concepts and C Programming P B Kotur Sapna Book House
3) Programming in C, E.Balagurusamy, Tata McGraw Hill
4) Let us C , Yashavant P. Kanetkar, BPB Publications
5) Computer Basics and C, V Rajaraman, Tata McGraw Hill

6) Programming With C, Gottfried, Sehaums Outline Series, Tata McGraw hill Publications

7) Computer science, A structured programming approach using C, B.A. Forouzan and R.F. Gilberg, Third edition, Thomson.

8) DataStructures Using C - A.S.Tanenbaum, Y. Langsam, and M.J. Augenstein, PHI/Pearson education.

9) C & Data structures - P. Padmanabham, B.S. Publications.

10) C Programming with problem solving, J.A. Jones & K. Harrow, Dreamtech Press

11) Programming in C - Stephen G. Kochan, III Edition, Pearson Eductaion.

12) Data Structures and Program Design in C, R.Kruse, C.L. Tondo, BP Leung, Shashi M, Second Edition, Pearson Education.

ADIT T-1.3: BASICS OF PC MAINTENANCE

COURSE OUTCOME:

✓ Understand the basic concepts of troubleshooting and general PC problems.

✓ Understand basic memory concepts.

✓ Acquire the knowledge of disk performance and characteristics

✓ Know about working of printer and installing printer drivers

COURSE CONTENT:

UNIT-I

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. Installing & configuring ANTI VIRUS.

UNIT-II

Hard Disk: Introduction, Disk Basics, Disk Performance & Characteristics, Drive, Construction, Drive Testing & troubleshooting. Motherboard & Buses: Introduction, Motherboard Components, Expansion Slots system Bus Functions & Features. Upgrading & Troubleshooting Motherboard, General Bus Troubleshooting.

UNIT-III

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

UNIT-IV

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

REFERENCE BOOKS:

1. Upgrading & Repairing PCs : Muller – Prentice Hall – 10th Edition, 2000.
2. Complete PC Upgrade & Maintenance Guide : Mark Minasi–BPB Publishers–15th Edition, 2004. Learning PC hardware – Bangia ramesh khanna book Pub private
3. Bigelow Stephen J P. C Touble shooting and repair Dremtech press
4. PC software made simple Taxali R. K Tata MC Graw – Hil[Publishing company
5. Operating System – Godbole Achyut Tata MC Graw – Hil[Publishing company
6. Operating System Deitel Harrey .M. Pearson education Asia

ADIT T-1.4 : ECOMMERCE

COURSE OUTCOME:

✓ Understand the fundamentals of E-commerce, types and applications.

✓ Evaluate the role of the major types of information systems in a business environment and their relationship to each other.

✓ Assess the impact of internet and internet technology in a business electronic commerce and electronic business.

COURSE CONTENT:

UNIT-I

Introduction to E-commerce: Introduction, E-commerce or Electronic Commerce- An Overview, Electronic Commerce – Cutting edge, Electronic Commerce Framework. Evolution of E-commerce: Introduction, History of Electronic Commerce, Advantages and Disadvantage of E-commerce, Roadmap of e-commerce in India

UNIT-II

Network Infrastructure: Introduction, Network Infrastructure- An Overview, The Internet Hierarchy, Basic Blocks of e-commerce, Networks layers & TCP/IP protocols, The

Advantages of Internet, World Wide Web

UNIT-III

E-commerce Infrastructure: Introduction, E-commerce Infrastructure-An Overview, Hardware, Server Operating System, Software, Network Website. Managing the e-Enterprise: Introduction, e- nterprise, Managing the e-Enterprise, E-business Enterprise, Comparison between Conventional Design and E-organization, Organization of Business in an e- Enterprise

UNIT-IV

E-Commerce Process Models: Introduction, Business Models, E-business Models Based on the Relationship of Transaction Parties, e-commerce Sales Life Cycle (ESLC) Model, Risks of Insecure Systems: Introduction, An Overview of Risks Associated with Internet Transactions, Internet Associated Risks, Intranet Associated Risks, risks associated with Business Transaction Data. Transferred between Trading Partners. Management of Risk: Introduction, Introduction to Risk Management, Disaster Recovery Plans, Risk Management Paradigm

UNIT-V

Electronic Payment Systems: Electronic Payment Systems, Electronic Cash, Smart Cards and Electronic Payment Systems, Credit Card Based Electronic Payment Systems, Risks and Electronic Payment Systems

REFERENCE BOOKS:

1. E-Commerce Concepts, Models, Strategies- :- G.S.V.Murthy Himalaya Publishing House

2. 111E- Commerce :- Kamlesh K Bajaj and Debjani Nag

3. Electronic commerce :- Gray P. Schneider 4. E-
   Commerce, Fundamentals & Applications : Chand
   (Wiley).

ADIT T-1.5 : DIGITAL IMAGE EDITING USING PHOTOSHOP

COURSE OUTCOME:

✓ Understand the basic concepts of PhotoShop.

✓ Creating a new file, saving and printing a document using PhotoShop

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COURSE CONTENT:

UNIT-I

Introduction of PhotoShop, Creating a New File, Main Selections, Picking color, Filling a selection with color, More ways to choose colors and fill selections, Painting with paintbrush tool, Using the magic wand tool and applying a filter, Saving your document Color Mode, Gray Scale Color Mode, RGB Color Mode, CMYK Color Mode, Bitmap Mode, Open a file, Preference, Foreground & background, Changing Foreground and Background colors,

UNIT-II

Using the Large color selection Boxes and small color swathes, Using the Eyedropper tool to sample Image color, Changing the Foreground Color While using a Painting Tool, Using Brushes, Selecting the Brush Shape, Drawing a vertical and Horizontal Straight lines with any brush, Drawing connecting Straight Lines (at any angle) with any brush, Creating a New Brush, Saving Brushes, Loading Brushes, Creating a Custom Brushes, Using the Painting Modes, Fade, Airbrush Options, Pencil Options.

UNIT-III

Rubber stamping an Aligned Clone, Rubber Stamping, Impressionist Style, Using line tool, Using the Editing Tool, The Smudge Tool, The Blur and Sharpen Tool, The Dodge / Burn Tool, Shadows, Mid,tones and Highlights, Selection Tools, Making Rectangular and Square Selections, Feathering a Selections, Lasso Features, Lasso Options, Making selections by color or Gray Scale value using the Magic Wand, Moving an anchor point or Direction point to change the shape of curve, Adding and Removing Anchor points, Moving Path, Saving, Loading and Creating New Path, Filling & Stroking Path

UNIT-IV

Introduction of layers, Creating & editing New layers, Adding a background, Creating Layer Mask, Layer Masks, Adjustment Layers, Adding Fills and Gradients, Filling with paint bucket tools, Filling type with grading Fills, Applying Filters, Blur Filters, Render Filters, Sharpen Filters, Sketch Filters, Texture Filters, Other Special Filters, Printing your document, Save your file, Save file as a JPEG, TIFF, GIF, PNG.

REFERENCE BOOKS:
1. Anil madan, multimedia systemsdesign
2. Learning multimedia Barstow Bruce & Martin tony, photoshop 7 - the ultimate reference

3. Burke daronthy & Clabria jane, multimedia systems
4. Chapra steven.c & Canale raymond.p., digital multimedia
5. David matthew, multimedia technology application
6. Muley.d.s., fundamentals of computers graphics and multimedia
   Pender Thomas p, multimedia - a hands onintroduction

SECOND

SEMESTER ADIT T-2.1: INTRODUCTION TO

MULTIMEDIA COURSE OUTCOME

✓ Know about hardware and software components of multimedia
✓ Know about web documents.
✓ Understand the multimedia elements and multimedia file formats

COURSE CONTENT:

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.

REFERENCE BOOKS:

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

ADIT T-2.2: BUSINESS DATA PROCESSING

COURSE OUTCOME:

- ✓ Understanding the meaning and purpose of data processing
- ✓ Know about word processing and spreadsheet.
- ✓ Know about database and SQL

COURSE CONTENT:

UNIT-I

Meaning and purpose of Data processing - Source documents data input data Manipulation - Output of information - data storage -Files and Records - file creation - File access - File manipulation and maintenance - File generation - sequential and Direct file organisation.

UNIT-II

Meaning and purpose of windows - menus - Dialog Boxes - File Management under Windows, features of word processing under Windows - Microsoft Word - File Menu - Using Letter wizard for producing business letters -Entering, selecting, inserting, viewing text - Normal view - Page view - Point view - Zooming the view - character and paragraph formating - Printing a document.

UNIT-III

Introduction to spreadsheet - spreadsheet overview - formating worksheet Data - Relative and absolute Referencing - working with Formula working with Functions - Creating and using Macros - Data Management through worksheets - analysis through charts/graphs - Setting print Styles - Printing worksheets and charts/Graphs.

UNIT-IV

Introduction to database - concepts of relational Database Management Applications - Types of Database Models - Network Model Heirarchial Model - RDBMS - ORDBMS.

UNIT-V

Introduction to SQL - Parts of SQL-- DML, DDL, DCL and Query Language creating and manipulating tables -Inserting data into tables Restricting and validating Data Entry with Constraints -creating simple reports using oracle Plus Report Manager - Maintaining users and Database Administration - user creation - Roles and Privileges concepts of Front -end Applications - Need for data entry screens - D2k as a front -and tool. Working with D2K forms Designer - forms, Menus, Tool Bars, D2K reports for better Reporting of Data - Master detail reports.

REFERENCE BOOKS:

1. John Shelly and Roger Hunt, Computer Studies : A first course, PHI
2. Guy Hart-Davis, The ABCs of Microsoft office, BPB
3. Ivon Byross - Developing Commercial Applications using Developer 2000 version 2 (Forms and Reports 3)

ADIT T-2.3: WEB PROGRAMMING CONCEPTS

COURSE OUTCOME:

- ✓ Use an integrated development environment to write, compile, run, and test simple object- oriented Java programs.

- ✓ Read and make elementary modifications to Java programs that solve real-world problems.

- ✓ Validate input in a Java program, Identify and fix defects and common security issues in code.

- ✓ Document a Java program using Javadoc.

- ✓ Use a version control system to track source code in a project.

COURSE CONTENT:

UNIT I

Basics in Web Design, Brief History of Internet ,What is World Wide Web, Why create a web site, Web Standards.Introduction to HTML, HTML Document,Basic structure of an HTML document ,Creating an HTML document, Introduction HTML Elements, Tags, Text , Formatting Pre , Attributes, Font, Text Links, Comments,Lists.

UNIT II

HTML – Images, Image Links, image maps,Tables, Bgcolor, Color Codes,Color Chart

,Background, web Forms , Forms, Input , TextFields ,Password , Reset ,Submit, Checkboxes

,Radio ,Select,Hidden Fields , -Upload , Text area.Special Tags, Body , Meta ,Style.

UNIT III

Creation of animated GIF. Sizing the pictures. Multimedia Objects Adding external images, video, and sound file including device independent (DVI) files. Add marquees of scrolling text. Frames Setting and releasing frames. Using one frame to index another. Creating floating frames, borderless frames and frames with borders.

UNIT IV

CSS: CSS Introduction ,CSS Syntax ,CSS Id & Class ,CSS How ,CSS Styling, Styling, Backgrounds, Styling Text, Styling Fonts, Styling Links ,Styling Lists ,Styling Tables, CSS Box Model ,CSS Border, CSS Outline, CSS Margin, CSS Padding ,CSS Dimension ,CSS Display, CSS Positioning, CSS Floating, CSS Navigation Bar, CSS Image Gallery, CSS Image Opacity , CSS align.

REFERENCE BOOKS:

1. HTML & XHTML: The Complete Reference (Osborne Complete Reference Series) 4th Edition by Thomas Powell.
2. Head First HTML and CSS by Elisabeth Robson and Eric Freeman
3. HTML5 and CSS3 All-in-One For Dummies by Andy Harris
4. JavaScript: the Complete Reference Paperback– 6 Sep 2004
5. Mastering HTML, CSS &JavaScript Web Publishing Paperback– 15 Jul 2016
6. VBScript Pocket Reference1st Edition Practical's based on: Web Programming

ADIT T 2.4 : OBJECT ORIENTED PROGRAMMING WITH JAVA

COURSE OUTCOME:

✓ Justify the philosophy of object-oriented design and the concepts of encapsulation, abstraction, inheritance, and polymorphism.

✓ Design, implement, test, and debug simple programs in an object-oriented programming language.

✓ Describe how the class mechanism supports encapsulation and information hiding.

✓ Compare and contrast the notions of overloading and overriding methods in an object- oriented language.

COURSE CONTENT:
UNIT I

Introduction to Java and its Features, Introduction to object oriented paradigm, Concepts of Object

- Oriented programming (Objects and Classes, data abstraction and data abstraction and

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encapsulation, inheritance, polymorphism, Dynamic binding). Basics of Java, Java history; Java features (Compiled and interpreted, Platform-independent and portable, Object - Oriented, Robust and Secure, Distributed, Simple, Small and Familiar, Multithreaded and interactive, High performance, Dynamic and extensible); How Java differs from C and C++.

UNIT II

Classes, Objects and Methods, Introduction, Defining a class, adding variables and methods, creating objects, accessing class members, constructors, method overloading and overriding, this keyword, finalize () and garbage collection, inheritance and abstract classes. Packages - Introduction, Java API packages, using system packages, naming conventions, creating packages, accessing a package, using a package, adding a class to a package, Java script.

UNIT III

Interfaces - Introduction, Defining interfaces Extending Interfaces, implementing interfaces, accessing interface Variables. Managing Error and Exceptions - Introduction, types of errors (Compile-time and run-time errors), Exceptions, syntax of exception Handling code, multiple catch statements, using finally statement, throwing our own exceptions.

UNIT IV

Applet Programming - Introduction, how applets differ from applications, building applet code, applet Life Cycle (initialization state, running state, idle or stopped state, dead state, Display state, Creating an executable applet, designing a web page, AWT and swings Event handling.

REFERENCE BOOKS:

1. Object-Oriented Programming with JAVA A Primer 5e, E Balagurusamy, McGrawHill, ISBN:978-93-51343-20-2,Edition:2014.

2. Object-Oriented Programming From Problem Solving to Java ,Jose M. Garrido ,ISBN : 81- 7008-625-6 , Edition : 2004 ,Pages : 360

3. Keeping Ahead - Java 2 ,Benjamin Aumaiile ,ISBN : 81-7008-470-9 ,Edition : 2006 Simply Java An Introduction to Java Programming, James R. Levenick, ISBN : 97881-318-0200-7 ,Edition : 2007

4. Internet & Java Programming, Harish Kumar Taluja ,ISBN : 978-81-318-0367-7 ,Edition : First, 2008 5. Programming Engineering Computations in Java ,Dr. Raja

Subramanian, ISBN : 97881-318-0209-0 ,Edition : First, 2007

5. Secrets of JAVA ,Er. R. Kabilan ,ISBN : 978-81-318-0720-0, Edition : First, 2009

ADIT T-2.5: CYBER

SECURITY COURSE

OUTCOME

- ✓ Understand about firewalls and packet filters
- ✓ Know about web application tools
- ✓ Know about cyber crime investigation

COURSE CONTENT:

UNIT-I

Systems Vulnerability Scanning Overview of vulnerability scanning, Open Port / Service Identification, Banner / Version Check, Traffic Probe, Vulnerability Probe, Vulnerability Examples, OpenVAS, Metasploit. Networks Vulnerability Scanning - Netcat, Socat, understanding Port and Services tools - Datapipe, Fpipe, WinRelay, Network Reconnaissance

– Nmap, THC-Amap and System tools. Network Sniffers and Injection tools

– Tcpdump and Windump, Wireshark, Ettercap, Hping Kismet

UNIT-II

Network Defense tools Firewalls and Packet Filters: Firewall Basics, Packet Filter Vs Firewall, How a Firewall Protects a Network, Packet Characteristic to Filter, Stateless Vs Stateful Firewalls, Network Address Translation (NAT) and Port Forwarding, the basic of Virtual Private Networks, Linux Firewall, Windows Firewall, Snort: Introduction Detection System.

UNIT-III

Web Application Tools Scanning for web vulnerabilities tools: Nikto, W3af, HTTP utilities - Curl, OpenSSL and Stunnel, Application Inspection tools – Zed Attack Proxy, Sqlmap. DVWA, Webgoat, Password Cracking and Brute-Force Tools – John the Ripper, L0htcrack, Pwdump, HTC-Hydra

UNIT-IV

Introduction to Cyber Crime Investigation Firewalls and Packet Filters, password Cracking, Keyloggers and Spyware, Virus and Warms, Trojan and backdoors, Steganography, DOS and DDOS attack, SQL injection, Buffer Overflow, Attack on wireless Networks.

REFERENCE BOOKS:

1. Secrets and Lies: Digital Security in a Networked World- Book by Bruce Schneier.
2. Computer Security Reference Book- Editors: Donn B. Parker, Keith M. Jackson, Jan Hruska.
3. The Cybersecurity to English Dictionary- Book by Raef Meeuwisse.
4. Network Security: Private Communication in a Public World- Book by Mike Speciner and Radia Perlman.
5. Computer Security: Art and Science-Textbook by Matt Bishop.