Student Kit

PGDCA

2015-16 Onwards

Devi Ahilya Vishwavidyalaya
School of Computer Science & IT
"We make things happen . . ."
Producing world – class
IT Professionals
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- ***To produce world-class professionals who have excellent analytical skills, communication skills, team building spirit and ability to work in cross cultural environment.***
- ***To produce international quality IT professionals, who can independently design, develop and implement computer applications.***
- ***Professionals who dedicate themselves to mankind.***

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School of Computer Science & IT, DAVV, Indore
Scheme for PGDCA. : 2015-16

PGDCA I

Sub. Code	Subject	L	T	P	C	Internal	Practical/Project	End Sem	Total
CS -1001	Fundamentals of Computer and Information Technology	3	1	0	4	40	-	60	100
CS-4223	Programming and Problem Solving Using Java	3	1	2	5	30	20	50	100
CS-1501	Operating System Basics & PC Packages	2	1	4	5	30	20	50	100
IC-3913	Financial Accounting	2	1	0	3	40	-	60	100
CS-3424	E-Governance	2	1	0	3	40	-	60	100
CS-4809A	Comprehensive Viva				4				
Total					**24**				

PGDCA II

Sub. Code	Subject	L	T	P	C	Internal	Practical/Project	End Sem	Total
CS-2402	Introduction to Database Management System - I	3	1	2	5	30	20	50	100
CS-4517	IT Infrastructure Management	3	1	0	4	40	-	60	100
CS-2602	Internet and E-Commerce	3	1	2	5	30	20	60	100
CS-5805A	Major Project				6				
CS-5809A	Comprehensive Viva				4				
Total					**24**				

PGDCA – I

CS-1001 Fundamentals of Computers & Information Technology

Unit 1

Know the Computer -, Introduction, What does computer stand for?, Strengths of computers, Limitations of computers, Fundamental uses of computers, Development of computers, Types of Computers, Generations of Computers.

Personal Computer - Introduction, Personal computer, Uses of personal computers, Components of personal computers, Evolution of PCs, Developments of processors, Architecture of Pentium IV, Configuration of PC

Unit 2

Number System - Introduction, Digital and Analog Operations, Binary Data, Binary Number System, Decimal Number System, Octal Number System, Hexadecimal Number System, Fractional Conversion, Coding System

Data Representation and Binary Arithmetic - Introduction, Bits, Nibbles, Bytes and Words, Data Representation, Coding system, Binary Arithmetic, Binary Addition, Binary Subtraction, Binary Multiplication, Binary Division, Character Representation, Checking the Result of Binary Arithmetic

Boolean Algebra and Logic Gates - Introduction, Boolean Algebra, Binary Valued Quantities, And Operator, OR Operator, NOT Operator, Basic Postulates of Boolean Algebra, Theorems of Boolean Algebra, De Morgan's Theorems, Reducing Boolean Expression by their Simplifications, Proving the Equations of Boolean Expressions By Truth Table, Principle of Duality, Standard Forms, Basic Logic Gates, Use of Logic Gates in Circuits, Karnaugh Maps

Unit3

Input Devices, Output Devices, Central Processing Unit, Storage Devices**, Basics of Software-** Introduction, What Does Software Stand For ?, Needs of software, Types of software

Operating System - Introduction, Operating System, Why an Operating System, Functions of Operating System, The Booting Process, Types of Reboot, Booting From Different Operating System, Types of Operating System, Some Prominent Operating Systems

Disk Operating System - Introduction, What is DOS?, Functions of DOS, Versions of DOS, DOS Commands , Important Internal Commands of DOS, Important External Commands of dos, Executable Vs Non-Executable Files In Dos.

Unit 4

Computer Virus - Introduction, Virus, History, Mechanism of virus, How a Virus Spreads, How is virus named, A few Prominent Viruses, Types of Computer Virus. **Communication and IT -** Introduction, Computer Network, Communication Process, Communication Types, Transmission Media, Wireless Media, Communication Channels/Media, Modem, Characteristics of a Modem, Types of Modem.

Unit 5

Networks- Introduction, Internet Vs Intranet, Types of Network, Topology, Types of Connectivity, Network Devices. **Internet -** Introduction, What is Internet actually ?, Growth of Internet, Owner of the Internet, Internet Service Provider, Anatomy of Internet, ARPANET and Internet history of the World Wide Web, Services Available on Internet (Internet Tools), Basic internet terminologies, net etiquette, Application of internet

CS- 4223 Programming and Problem Solving Using Java

UNIT I

Introduction to Java: Features of Java, Object-oriented programming overview, Introduction of Java Technologies, How to write simple Java programs, Data Types, Variables, Memory concepts, decision making operators, Naming Conventions, Introduction to Class, Objects, Methods and Instance Variables, Primitive type Vs Reference Type, Initializing Objects with Constructors. Type conversion & casting, Operators, Control Statements, break and continue Statements. Static Method, static field and Method Overloading.

UNIT II

String Handling: The String constructors, String operators, Character Exaction, String comparison, String Buffer. Arrays: Enhanced for Statement, Passing Arrays to Method, Multidimensional Arrays, Variable Length Argument lists, Using Command-line Arguments. Final Instance Variables, this reference, static import, overloaded Constructors, Garbage collection and method finalize, Overloading methods, Parameter passing.

UNIT III

Inheritance: Relationship between Super classes and Subclasses, Using super, Constructor in Subclasses, The Object Class, Object Copying in Java. Polymorphism: Method overriding, upcasting, Dynamic Method Dispatch, final Method and classes, Abstract classes and Methods, instanceof operator, Downcasting, Class class, Runtime type Identification

UNIT IV

Packages and Interfaces: Defining a Package, Understanding CLASSPATH, Access Protection, Importing packages, creating own packages. Defining an Interface, Properties of interface, advantages of interface

UNIT V

Exception Handling: Introduction, overview of doing it and keywords used, when to use it, Java Exception Hierarchy, finally block.

Text Book:

1. Java 2: The Complete Reference by Herbert Schildt, Tata McGraw- Hill, 8th Edition, 2011.

Reference Book(s):

1. The Java Programming Language, Ken Arnold , James Gosling , David Holmes, 3rd Edition, Person Education, 2000.
2. Head First Java, Kathy Sierra, Bert Bates, O'Reilly Publication, 2nd Edition,2005

CS-1501Operating Systems Basics and PC Packages

UNIT I

Evolution of an operating system, Define Operating system, objectives and functions of an operating system, the operating system as a resource manager, types of an operation system.

UNIT II

Differentiate Dos, windows and linux/Unix. Introduction to Windows-7: Windows7 features, windows Desktop Setting, managing windows explorer.
Windows-7: Using Taskbar, Start Menu options, My Computer, Recycle Bin, My Network Place, My Documents. Creating user Accounts in Windows7.

UNIT III
Windows Accessories: - Calculator, Note Pad, Word Pad, Paint, Entertainment, Address Book.
Control Panel: Installation of Software, Addition of new hardware, installation of modem, Sound Card, Printers and Scanner, Date and time, taskbar and start menu.
Windows Explorer: Creating a new folders and other explore facilities, changing the look and feel of windows (Desktop, Wallpaper, Screen saver etc.).

UNIT IV
MS-WORD: Define word processor ,types of word processor, creating document in MS word, formatting features of MS-word, word standard toolbar ,text formatting, header and footer, auto text, document

MS-PowerPoint – creating presentation using slide master, working with different view and menus, editing and formatting text, slide time management process, inserting data and pictures.

UNIT V
MS-Excel: saving and quitting worksheet, opening and moving in an worksheet, toolbar and menus, working with formulas and cell referencing, Auto sum, Absolute and relative addressing, working with graph, functions, pivot table, data sort ,data filter.

Learning Resources Required Text(s) Books:
1. Microsoft windows XP STEP BY STEP - PHI
2. operating system – William stallings – pearson education
3. Unix operating System – sumitabha das – Tata McGraw hill

Essential References
1. Introduction to computer - Nortal-Mcgraw Hill
2. Microsoft office : Ron Mansdield – BPB publication

Electronic Materials:
1. http://www.dauniv.ac.in/coursematerial.php , https://www.tutorialspoint.com/ms_excel_online_training/index.asp, other Web Sites etc
2. Other learning material such as computer-based programs/CD, professional standards/regulations

IC-3913 Financial Accounting

Unit I
Introduction to book keeping: meaning, nature, development, objectives, merits and Difference between book keeping and accountancy. Fundamentals of accounting: Accounting concepts and conventions. Brief introduction to gaap and its importance. Accounting structure :the process of accounting –journal, ledger, subsidiary books.

Unit II

Trial Balance based on Double Entry Book Keeping System. Financial Systems and related concepts : Form and preparation of Income statements (P &L A/C), Statement of Financial Position.

Unit III
Methods of Depreciation – SLM Method and WDV method. Financing Decisions : Tools of Financial Analysis : Financial Statement Analysis, Statement of Financial position.

Unit IV
Break Even Analysis. Leverages : operating , financial and combined. Accounting Package – Tally (Operations)

Unit V
Inventory Management and Responsibility Accounting : Methods of Inventory Management and Material Issues. Responsibility Accounting _ Meaning , Objectives and Importance. Required

Text(s) :

1. Tulsian's Accountancy for Class XI, Financial Management by Khan &Jain.

Reference books :

1. Financial Accounting by TS Grewal.
2. Financial Management by Khan and Jain.
3. NCERT Books on Accounting and FM for Class XI and X

CS-3424 E-Governance

Goal: To provide the knowledge of good governance using information and communication technologies and case studies of different countries.

Unit1
Introduction of E-Governance: Needs of E-Governance, Issues in E-Governance applications and the Digital Divide; Evolution of E-Governance, Its scope and content; Present global trends of growth in E-Governance: Other issues.

Unit2
Models of E-Governance: Introduction; Model of Digital Governance: Broadcasting/ Wilder Dissemination Model, Critical Flow Model, Comparative Analysis Model, Mobilization and Lobbying Model, Interactive-service Model/Government-to-Citizen-to-Government Model (G2C2G);

Unit3

Evolution in E-Governance and Maturity Models: Five Maturity Levels, Characteristics of Maturity Levels, Key areas, Towards Good Governance through E-Governance Models.

Unit4
E-Governance Infrastructure and Strategies

E-readiness: Digital System Infrastructure, Legal Infrastructural Preparedness, Institutional Infrastructural Preparedness, Human Infrastructural Preparedness, Technological Infrastructural Preparedness; Evolutionary Stages in E-Governance.

Unit5

Data Warehousing and Data Mining in Government

Introduction; National Data Warehouses: Census Data, Prices of Essential Commodities; Other areas for Data Warehousing and Data Mining: Agriculture, Rural Development, Health, Planning, Education, Commerce and Trade, Other Sectors.

Text/ Reference books:

1. E-Governance: Concepts and Case Studies, C.S.R. Prabhu, Prentice-Hall of India Private Limited, 2004.
2. Backus, Michiel, e-Governance in Developing Countries, IICD Research Brief, No. 1, March 2001.

PGDCA – II

CS-2402 Introduction to DBMS

UNIT-I
Introduction: purpose of DBMS, view of data, data models: physical model, logical model, conceptual model, hierarchical model, network model. Object oriented model. database language, Database administrator, database user, overall system structure.

UNIT-II
Entity relationship model: basic concepts, mapping constraints, keys, E-R diagram, weak, entity features, design of an E-R database schema, reduction of E-R schema to table.

UNIT-III
Structured Query Language(SQL):basic structure, set operations, aggregate functions, null values, nested sub queries, data definition language(DDL), data manipulation language(DML), data control language(DCL), transaction control language(TCL).

UNIT-IV
Relational database design: Decomposition, normalization using functional dependencies, normalization using multivalued dependencies.

UNIT-V
Concept of RDBMS, characteristics of RDBMS, Codd's 12 rules, introduction to oracle tools, security.

TEXT BOOK

1. Database system concepts by A.silberschatz, H.F.Korth, and S.Sudershan 5th Edition McGraw Hill

REFERENCE BOOKS

1. An introduction to database management system by Vipin Desai
2. Modern database system by Mcfadden

CS-4517 IT Infrastructure Management

UNIT 1
IT Infrastructure: Overview
Definitions, Infrastructure management activities, Evolutions of Systems since 1960s (Mainframes-to-Midrange-to-PCs-to-Client-server computing-to-New age systems) and their Management, growth of internet, current business demands and IT systems issues, complexity of today's computing environment, Total cost of complexity issues, Value of Systems management for business.

Unit 2
IT Infrastructure Management
Factors to consider in designing IT organizations and IT infrastructure, Determining customer's Requirements, Identifying System Components to manage, Exist Processes, Data, applications, Tools and

their integration, Patterns for IT systems management, Introduction to the design process for information systems, Models, Information Technology Infrastructure Library (ITIL).

UNIT 3

Current computing environments

Complexity of current computing, multiple technologies, multiple vendors, multiple users, e-Waste disposal, Toal cost of ownership.

UNIT 4

IT system Management

Common tasks in IT system management, approaches for organization Management, Models in IT system design, IT management systems context diagram, patterns for IT system Management

Establishing business value of information system

Information system costs and benefits, Capital budgeting for information system, Real Options pricing models, Limitation of financial models.

Unit 5

Service Delivery Processes-I, Service Delivery Processes – II, Service Support Management –I, Service Support Management –II, Storage Management – I, Storage Management – II, Security Management –I, Security Management -II

IT Ethics

Introduction to Cyber Ethics, Intellectual Property, Privacy and Law, Computer Forensics, Ethics and Internet, Cyber Crimes

CS-2602 Internet and E-Commerce

Unit –I

Internet - Evolution, Protocols, Interface Concepts, Internet Vs Intranet, Growth of Internet, ISP, Connectivity - Dial-up, Leased line, VSAT etc., URLs, Domain names, Portals, Application.

E-MAIL - Concepts, POP and WEB Based E-mail, merits, address, Basics of Sending & Receiving, E-mail Protocols, Mailing List, Free Email services.

INTERNET protocols - Data Transmission Protocols, Client/Server Architecture & its Characteristics, FTP & its usages. Telnet Concept, Remote Logging, Protocols, Terminal Emulation, Massage Board, Internet chatting - Voice chat, text chat.

Unit –II

World Wide Web (WWW)- History, Working, Web Browsers, Its functions, Concept of Search Engines, Searching the Web, HTTP, URLs, Web Servers, Web Protocols.

Unit –III

Web publishing - Concepts, Domain name Registration, Space on Host Server for Web site, HTML, Design tools, HTML editors , Image editors, Issues in Web site creations & Maintenance, FTP software for upload web site.

Unit –IV

Html - Concepts of Hypertext, Versions of HTML, Elements of HTML syntax, Head & Body Sections, Building HTML documents, Inserting texts, Images, Hyperlinks, Backgrounds and Color controls, Different HTML tags, Table layout and presentation, Use of font size & Attributes, List types and its tags, Use of Frames and Forms in web pages.

Unit –V

E - Commerce An introductions, Concepts, Advantages and disadvantages, Technology in E- Commerce, Internet & E-business, Applications, Feasibility & various constraints. E-transition challenges for Indian corporate. Electronic Payment Systems: Introduction, Types of Electronic Payment Systems, Digital Token-Based Electronic Payment Systems, Smart Cards and Electronic Payment Systems, Credit Card-Based Electronic Payment Systems, Risk and Electronic Payment Systems.

TEXT & REFERENCE BOOKS :

• **Internet and Web Design Made Easier** By A. Mansoor, Pragya Publications, Matura
• **O level Module - M 1.2** - Internet & web page designing by V.K.Jain – BPB Publications.
• ***E-Commerce An Indian Perspective (Second Edition)*** *– by P.T. Joseph, S.J. Presentice-Hall of India*
• **Internet for Everyone** - Alexis Leon and Mathews Leon, Vikas Publishing House Pvt. Ltd., New Delhi
• **Internet for Dummies** - Pustak Mahal, new Delhi
• A Beginner's Guide to HTML available at:
http://www.ncsa.uiuc.edu/General/Internet/WWW/HTMLPrimerAll.html