SYLLABUS

PGDCA

1st SEMESTER

Session 2021-2022

Mission of SCS&IT, DAVV

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, who are environment conscious, follow social norms and ethics.

School of Computer Science & IT,
Devi Ahilya Vishwa Vidyalaya, Indore
www.scs.dauniv.ac.in

Course Name PGDCA 1st Semester
Subject Code: CS-1001
Subject Name: Fundamentals of Computer & Information Technology

Aim of the Subject

Prepare students to design and create algorithmically complex software and develop new and effective algorithms to solve computing problems, design and implement software,

Objectives

1) Describe the usage of computers and why computers are essential components in business and society.
2) Utilize the Internet Web resources and evaluate on-line e-business system.
3) Solve common business problems using appropriate Information Technology applications and systems.
4) Introduce the fundamentals of computing devices and reinforce computer vocabulary, particularly with respect to personal use of computer hardware and software, the Internet, networking and mobile computing.
5) Explain the representation of data and information in computer systems

Learning Outcomes

1) Understanding the concept of input and output devices of Computers and how it works and recognize the basic terminology used in computer programming.
2) Describe the usage of computers and why computers are essential components in business and society.
3) Utilize the Internet Web resources and evaluate on-line e-business system.
4)Identify categories of programs, system software and applications. Organize and work with files and folders.
5) Describe various types of networks network standards and communication software.

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

Unit 3

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

Text Book(s)

1) Fundamentals of Computer Science and Information Technology by Umesh Kumar Singh (Author), Sumit Jain (Author)

2) Computer Fundamentals- by P.K SINHA
3) Fundamentals Of Computer And Programming- by Agarwal

Reference Material(s)

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Course Name PGDCA 1st Semester
Subject Code: CS-4223
Subject Name: Programming and Problem-Solving Using JAVA

Aim of the Subject

To give students a good understanding of basic concepts of object-oriented program design using JAVA. To teach and enable students to develop object-oriented programming skills within the Java language; to enable students to develop object-oriented programs through real life examples.

Objectives

Briefly describe any course development objectives that are being implemented. (eg increased use of IT or web based reference material, changes in content as a result of new research in the field)
As the technologies in Java are changing frequently so with the textbook,
latest changes will also be incorporated in the course using web-based material. Students will also be given programming examples and exercises on every topic. The programming assignments will be checked every week in the computer-lab

Learning Outcomes

- Understand basic principles of object-oriented program design using Java.
- Understand the basic and some advanced issues related to writing classes and methods such as data, visibility, scope, method parameters, object references, and nested classes.
- Understand the basic ideas behind class hierarchies, polymorphism, and programming to interfaces.
- Get exposure to exceptions and basic I/O streams.
- Develop solid Java programming skills and the ability to put in practice the acquired knowledge and understanding of the Java language and object-oriented design.

Unit 1

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 2

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 3

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 4

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 5

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

Text Book(s)

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

Reference Material(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

Course Name PGDCA 1st Semester
Subject Code: CS-1501
Subject Name: Operating System Basics & PC Packages

Aim of the Subject

To make understanding of structure and functions of modern operating system and become proficiency in creating formatted documents.

Objectives

- To recognize the concepts and principles of operating systems.
- To provide comprehensive introduction to understand the underlying principles, techniques, approaches, various types and functions in operating systems.
- To describe of operating systems.
- To explain and execute various DOS and Unix operating commands.
- To be proficient in important Microsoft Office programs.
- To use Word, Excel and PowerPoint in a variety of professional, educational, and personal situations.

Learning Outcomes

Learning Objectives: Upon successful completion of this course, students are expected to have the ability to:

- Understand and describe the basic components of a computer operating system, and the interactions among the various components.
- Describe the general architecture of computer contrast and compare differing structures for operating systems.
- Conceptualize synchronization amongst various components of a typical operating system.
- Understand and simulate activities of various operating system components.
- Make files and understand the high-level structure of the Unix Operating.
- Correlate basic concepts of operating system with an existing operating system.
- Claim proficiency in Word, PowerPoint and MS-Excel.

Unit 1

Operating System:Evolution of an operating system, Define Operating System, Objectives andfunctions of an operating system, the operating system as a resource manager, types of an operating system. Differentiate DOS, Windows and Linux/Unix operating system.

Unit 2

Introduction to Windows XP: Windows XP features, Windows Desktop Setting,

managingwindows explorer.Windows XP: Using Taskbar, Start Menu option, My computer, Recycle Bin, My Network Place, My Documents, Creating user Accounts in Win-XP.Windows Accessories: Calculator, Note Pad, Word Pad, Paint, Entertainment, Address Book.

Unit 3

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 4

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 Power Point: creating presentation using slide master, working with different view and menu, editing and formatting text, slide time management process, inserting data and pictures

Unit 5

MSEXCEL: Saving and quitting worksheet, opening and moving in an worksheet, toolbar andmenus, working with formulas and cell referencing, Auto sum, Absolute and relative addressing, working with graph, function, pivot table, data sort, data filter.

Text Book(s)

1.Microsoft Windows XP STEP BY SETP-PHI
2.Operating System –William Stallings –Pearson Education
3.Unix Operating System –Sumitabha Das –Tata McGraw Hill

Reference Material(s)

1.Introduction to computer –Nortal
2.Microsoft Office : Ron Mansdield BPB Publication

Course Name PGDCA 1st Semester
Subject Code: CS-3424
Subject Name: E-Governance

Aim of the Subject

To provide better buisness Environment. To provide the knowledge of good governance using information and communication technologies and case studies of different countries.

Objectives

To reduce difficulties for buisness ,provide immediate information and enable digital communication by e-Buisness.

Learning Outcomes

It perceived academic performance,It improves knowledge provide user Accessibility and time flexibility

Unit 1

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_xFFFE_Governance: Other issues.

Unit 2

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).

Unit 3

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

Unit 4

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

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Unit 5

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 Book(s)

C.S.R Prabhu

Reference Material(s)

Academia.edu

Course Name PGDCA 1st Semester
Subject Code: IC-3913
Subject Name: Financial Accounting

Aim of the Subject

The objective of this course is to acquaint students with the accounting concepts, tools and techniques and preparation of accounts for certain businesses so that they can develop business application easily.

Objectives

The course is designed to make students:

1) Learn fundamental accounting concepts, elements of financial statements, and basic accounting vocabulary.

2) To give an in-depth knowledge of all business transactions and how they should be recorded, classified & interpreted to get a meaningful judgment of viability &
profitability of the industry.

3) Learn the concepts of journal, ledger, final accounts, Inventory Management, Break Even Point.

4) To develop an understanding of financial statements and the principles and concepts underlying them;

5) To lay foundation for developing the skills to interpret Financial Statements;

Learning Outcomes

Learning Outcome

The mission of the Accounting Program is to prepare students about a functional domain of accounting so that they can utilize it in technology.

1) Students will recognize commonly used financial statements, their components and how information from business transactions flows into these statements

2) Students will demonstrate progressive learning in the elements of managerial decision making, including planning, directing and controlling activities in a business environment.

3) Students will be able to understand tax issues.

4) Students will be able to demonstrate knowledge of preparation of Financial Statements and or financial schedules in accordance with Generally Accepted Accounting Principles through analysis and synthesis of information as well.

5) Students will be able to demonstrate knowledge in setting up a computerized set of accounting books for a “for profit “ entity.

6) Students will demonstrate progressive affective domain development of values, including but not limited to receiving and responding to: the role of

accounting in society, business ethics, environmental and global societal sustainability, and/or career opportunities.

7) Students will complete a Project/ Written Assignment that integrates career orientation and or professional development skills.

8) Students will be able to demonstrate knowledge of various advanced accounting issues related to Financial Accounting within a global and or ethical framework.

Unit 1

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 2

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 3

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

Unit 4

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

Unit 5

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

Text Book(s)

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

Reference Material(s)

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

SYLLABUS

PGDCA

2nd SEMESTER

Session 2021-2022

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To produce international quality IT professionals, who can independently design, develop and implement computer applications.

Professionals who dedicate themselves to mankind, who are environment conscious, follow social norms and ethics.

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Course Name PGDCA 2nd Semester
Subject Code: CS-4517
Subject Name: IT Infrastructure Management

Aim of the Subject

To provide knowledge of UNIX operating system including multi-user concepts, terminal emulation, use of system editor, basic UNIX commands, and writing script files.

Objectives

7. To expose students to emerging wireless technologies and their potential impact.

Learning Outcomes

1. It will provide student understanding of various Unix OS and usage.
2. Basic commands.
3. Understanding with file systems.
4. Learns working in editors.
5. Concepts of shell programming and system call will be developed.
6. Understanding of communication facilities used in UNIX.
7. Practicing administrative commands

Unit 1

Background: Evolution of Unix OS. Unix implementations. Features of Unix operating system. Linux operating system: Development of Linux. Applications of Linux operating system. Basic UNIX environment: Basic commands, directory management, pipes, tee, I/O redirection and other utilities.

Unit 2

Advanced commands: File system and process management commands, Shell, Pattern matching, navigating the File Systems. Unix editor: VI editor, Creating new files. Text addition, deletion and changes. Dealing with sentences and paragraphs. Searching. Cut, paste and copy. Running C/C++ programs.

Unit 3

Shell programming: Features of shell. Shell variables. Control statements. Advance shell
programming: Command line arguments. Interactive shell scripts. Debugging of shell scripts. Communication facilities in Unix.

Unit 4

Structure of Unix operating system: Structure of unix kernel, Unix system calls. Unix system:

File system calls, Process management calls. Advance Filter: Awk: Number processing, Interface with shell, functions.

Unit 5

Unix system administration: Adding and removing users. User accounting. Adding and removing hardware. Performing backups and restore. Disk space management. Unix system
administration: Configuring the kernel. Network management in Unix. Performance analysis.
Unix Desktop

Text Book(s)

Unix Concepts And Application by Sumitabha Das

Reference Material(s)

UNIX AND LINUX SYSTEM ADMINISTRATION HANDBOOK
PPT and lectures note (pdf format)

Course Name PGDCA 2nd Semester
Subject Code: CS-2602
Subject Name: Internet and E-Commerce

Aim of the Subject

This course provides an introduction to the concepts, vocabulary, and procedures associated with E-Commerce and the Internet. The student gains an overview of all aspects of E-Commerce.

Objectives

1. Discuss fundamentals of e-commerce, types and applications.
2. Evaluate the role of the major types of information systems in a business environment and their relationship to each other.
3. Assess the impact of the Internet and Internet technology on business electronic commerce and electronic business.
4. Identify the major management challenges for building and using information systems and learn how to find appropriate solutions to those challenges.
5. Learn strategies for e-commerce, Mobile Commerce, Wireless Application Protocol, WAP technology and Mobile Information devices.

Learning Outcomes

1. Explain the concept of ecommerce and its revolution.
2. Explain the infrastructure of the Internet and how the various elements contribute to the marketing distribution solutions.
3. Explain and develop solutions for implementing an ecommerce site.
4. Discuss security and ecommerce and the ramifications of neglecting it.
5. Evaluate a payment system for a site.

Unit 1

Electronic Commerce: Overview, Definitions, Advantages & Disadvantages of E Commerce, Threats of E-Commerce, Cyber Laws. Technologies: Relationship between E-Commerce and Networking, Different Types of Networking for E-Commerce, internet, intranet, EDI Systems. Business Models of E-Commerce; Model Based on Transaction Type, Model Based on Transaction Party – B2B, B2C, C2B, C2C, E-Governance.

Unit 2

Wireless Application Protocol: Definition, Hand Held Devices, Mobility & Commerce. Mobile Computing, Wireless Web, Web Security, Infrastructure Requirement for E Commerce. Convergence: Technological Advances in Convergence – Types, Convergence and its implications, Convergence and Electronic Commerce.

Unit 3

Collaborative Computing: Collaborative product development, Content Management: Definition of content, Authoring Tools and Content Management, Content – partnership, repositories, convergence, providers Web Traffic & Traffic management: Content Marketing. Call Centre: Definition, Need, Tasks Handled, Mode of Operation, Equipment, Strength & Weaknesses of Call Centre, Customer Premises Equipment (CPE). Supply Chain Management: E-logistics, Supply Chain Portal, Supply Chain planning Tools (SCP Tools), Supply Chain Execution (SCE), SCE – Framework, Internet's effect on Supply Chain Power.

Unit 4

E-Payment Mechanism; Payment through card system, E-Cheque, E-Cash, E-Payment Threats & Protections, E-Marketing: Home – shopping, E-Marketing, Tele-Marketing Electronic Data Interchange (EDI): Meaning, Benefits, Concepts, Application, EDI Model.

Unit 5

Risk of E-Commerce: Overview, Security for E-Commerce, Security Standards, Firewall, Cryptography, Key Management, Password Systems, Digital Certificates, Digital Signatures.

Text Book(s)

Ravi Kalakota, Andrew Winston, "Frontiers of Electronic Commerce", Addison Wesley.

Reference Material(s)

- Pete Lohsin , John Vacca "Electronic Commerce", New Age International.
- Goel, Ritendra "E-commerce", New Age International.
- Laudon, "E-Commerce: Business, Technology, Society", Pearson Education.