Academic Year: 2023-2024

PGDCA

Syllabus & Scheme

Semester – I & II

School of Computer Science

GYANVEER UNIVERSITY, SAGAR (M.P.)

Scheme of Examination PGDCA I Semester (Major /Minor/Elective)

School of Computer Science (Academic Session 2023-24)

Subject wise distribution of marks and corresponding credits

S. No.	Course Type	Subject	Subject Code	Paper Name	Maximum Marks Allotted									Total Marks	Contact Periods Per week			Total Credits
					Theory Slot				Practical Slot									
					End Term Exam	Internal Assesment Class test (Descriptive & Objective)/Assignment/Seminar/			Internal Assesment			External Assesment			L	T	P	
					FINAL EXAM	Internal Assesment I	Internal Assesment II	Internal Assesment III	Class test/ Interaction	Attendance	Practical/ Presentation	Viva Voce	Lab Work					
1	Paper I	Computer Application	PGDCA311T	Introduction to Information Technology	60	20	20	20	–	–	–	–	–	100	6	0	0	6
2	Paper II	Computer Application	PGDCA312T	Operating System	60	20	20	20	–	–	–	–	–	100	6	0	0	6
3	Paper III	Computer Application	PGDCA313T	P.C. Software	60	20	20	20	–	–	–	–	–	100	6	0	0	6
4	Paper IV	Computer Application	PGDCA314T	Programming & Problem Solving Through "C"	60	20	20	20	–	–	–	–	–	100	6	0	0	6
5	Paper V	Computer Application	PGDCA315P	Practical & VivaVoce	–	–	–	–	30	10	20	10	50	100	0	0	4	4

Total of Creditd is 6+6+6+6+4 = 28

Note* Allotment of Marks for Internal Assesment for theory portion is Best of Two / either of two and addition of them.

PGDCA Semester - I

PGDCA311T - INTRODUCTION TO INFORMATION TECHNOLOGY

Objectives:

- Understand the computer basics and WWW, Web design.
- Understand Types of Computer Systems and Central Processing
- Understand the concept of input and output devices of Computers

Course Content:

(Lecture-12)

UNIT-I

The World Wide Web, How it Happens, Connecting to Web, Browsing, Locating Information Web Multimedia, Information System, Software and Data, IT In Business and Industry Home and At Play, Education and Training, Entertainment and Arts, Sciences, Engg., Computer In Hiding, GPS, Types of Computer Systems and Central Processing Unit.

UNIT-II

Input and Output Devices, Keyboard Graphics, Inputting Text, Pointing Devices, Pixels and Resolutions, Laser Printers, Colors Printers, Other Printers, How Data Is Store , Characteristics, Floppy Disks, Hard Disk Drives, Optical Disk, Increasing Data Storage, Backing Up Your Data, The Smart Card.

Software What Is It, User Interface, Application Program, Operating System, Types

(Lecture-12)

UNIT-III

Entering and Editing Documents, Other Word Processing Features, Formatting Documents Desktop Publishing For Print, Screen, Spread Sheet Applications, Introduction, Entering Data, Chart and Graphs, Database Application Introduction, Principles of Data Storage, Working With a Database, Queries, Internet Connectivity. Network Application-Fax, Voice And Information Services, Person To Person Communication, Group Communication, Exchanging Lines. LAN – Introduction Architecture, The Exe System, WAN- Introduction. Devices and Media, Protocols, High Bandwidth Personal Connections.

(Lecture-12)

UNTI-IV

Multimedia-Introduction, Paint and Draw Application, Graphics Effect & Tech, Sound & Music, Video, Multimedia Authoring Tools, Presentation Devices, Sound & Motion, Video & Television.

Corporate Computing Introduction, Transaction Processing, Information Tools For Management Control, Marketing, Advertising, Sales, Design, Production Manufacturing Business On Internet, Virtual Office, Career, Recent Trends.

(Lecture-12)

UNIT-V

Programs-Introduction, First and Second Generation Languages, Programming Languages Procedural, Methods, How Programs are Developed, Programming Tech., Introduction, Branching & Looping, Function & Decomposition, Corporate Development, Personal Social Issues.

Learning Outcomes:

After completion of the course, the student will be able to

- Understand the computer basics and WWW, Web design.
- Understand Types of Computer Systems and Central Processing
- Understand the concept of input and output devices of Computers

Text Book:

1. Lambert: Internet 101.
2. Alter: Information Systems.
3. Information Technology: The Breaking Wave Curtain (TMH)
4. Fundamentals of I.T. By Chetan Shrivastava, Kalyani Comp, Apply. Is Business T.D.
5. Malhotra Dictionary of Computers By Sanjeev Sharma.

Computer Magazines

1.	C & C	2.	Comp. Today
3.	PC Quest	4.	Express
5.	PC Magazine	6.	PC World
7.	News Papers	8.	Central Computer

PGDCA Semester - I
PGDCA312T - Operating System

Objectives:

- Install & configure different operating systems.
- Write programs/ scripts for different scheduling algorithms.
- The course gives an introduction to operating systems. The central focus is on how an operating system, in an efficient or fair way, provides an abstracted interface to the hardware resources for programs.

Course Content:

(Lecture-12)

UNIT-I

History of Operating System : Generation, First, Second, Third, Fourth Generation Computer Architecture : Introduction, 4 GL Program, 3 GL Program, 2 GL Program, 1GL, OGL, The Context of a Program, Interrupts.

Operating System: Introduction Difference Services, Uses of System Call, The Issue of Probability, User's View, The Micro Facility, GUI, The Kernel, Booting.

(Lecture-12)

UNIT-II

Information Management: Introduction, File System, Device Driver, Terminal I/O. Process Management : Introduction, Process, Evolution of Multiprogramming, Context Switching, Process States, Transition, PCB, Process Hierarchy, Operations On a Process, Create Process, Kill Process, Dispatch Process, Change The Priority of a Process, Block Dispatch, Time Up, Wake Up, Suspend/Resume Operation, Multitasking. Inter- Process Communication: The Producer Consumer Problems, Solution.

(Lecture-12)

UNIT-III

Deadlocks: Introduction, Graphical Representation, Prerequisites, Strategies. Memory Management: Introduction, Single Contiguous Mgt., Fixed Portioned MM, Variables Portions, Non Contiguous Allocation- General Concepts, Paging, Segmentation, Combined System, Virtual Memory Mgt System. Operating Systems: Security And Protection.

(Lecture-12)

UNIT-IV

Parallel Processing: Introduction, What Is It, Difference Between Distributed and Parallel, Advantages, Writing Programs, Classification, Machine Architecture.

Issues Case Study- Mach DG/UX.

Operating System In Distributed Processing: Introduction, Distributed Processing. LAN Environment and Protocols.

Graphical User Interface and The O/S: Various Concepts.

(Lecture-12)

UNIT-V

UNIX – a Case Study: Introduction, History & Overview of UNIX, File System, Data St., For Processing/MM, Process States & Transactions, Execution and Terminating a Programming In UNIX, Using The System, Process Scheduling Memory Management, Netware - A CASE STUDY – Various Concepts.

Learning Outcomes:

After completion of the course, the student will be able to

- Install & configure different operating systems.
- Write programs/ scripts for different scheduling algorithms.
- The course gives an introduction to operating systems. The central focus is on how an operating system, in an efficient or fair way, provides an abstracted interface to the hardware resources for programs.

Text Book: Nutt/ operating Systems (AVL).

PGDCA Semester - I

PGDCA313T - PC SOFTWARE

Objectives:

- Assemble and set up computer systems.
- Configure and install computers
- Install, connect and configure various peripheral devices
- Diagnose and Troubleshoot issues in Computer Systems

Course Content:

UNIT-I **(Lecture-12)**

1. Computer Application and Dos:

2. Computer Application

3. Disk Operating System (Dos)

4. Additional Dos Commands

5. Configuring Dos and Batch Files

UNIT -II **(Lecture-12)**

1. Window:

2.Windows Basics

3. Windows Accessories

4. Using File Manager and Program Manager

UNIT-III **(Lecture-12)**

1. Word

2. Introduction to Word

3. Editing a Document

4. Move and Copy Text and Help System

5. Formatting Text and Paragraph

6. Finding and Replacing Text and Spelling Checking

7. Using Tabs

8. Enhancing Documents

9. Columns, Tables and Other Features

10. Using Graphics, Templates and Wizards

11. Using Mail Merge

12. Miscellaneous Features of Word.

(Lecture-12)

UNIT-IV

Excel: Introduction to Worksheet and Excel, Getting Started With Excel, Editing Cells and Using Commands and Functions, Moving and Coping, Inserting and Deleting Rows and Columns, Getting Help and Formatting a Worksheet, Printing The Worksheet, Creating Charts, Using Date and Time and Addressing

Modes, Naming Ranges and Using Statistical, Math and Financial Functions. Database In A Worksheet, Additional Formatting Commands and Drawing Toolbar, Miscellaneous Commands and Function. Multiple Worksheet and Macros.

(Lecture-12)

UNIT-V

Introduction to Desktop Publishing. Overview Power Point. Computer Viruses and E-Mic.

Adobe Creative Cloud Express, CORAL DRAW, Page Maker.

Learning Outcomes:

After completion of the course, the student will be able to

- Assemble and set up computer systems.
- Configure and install computers
- Install, connect and configure various peripheral devices
- Diagnose and Troubleshoot issues in Computer Systems

PGDCA Semester - I

PGDCA314T - Programming & Problem Solving Through "C"

Objectives:

- General Knowledge of Programming types, Problem solving concepts, usage of Algorithm/ Flowchart.
- Writing, compiling and debugging programs in C language.
- Students will learn how to design structure of c programs, using tokens.
- Formatted and unformatted I/O, control statement and Looping. Design programs containing decision structures.

Course Content:

(Lecture-12)

Unit –I: Overview of Problem solving: Introduction to computer based Problem solving, Programming concepts with flowcharting and algorithms , classification of Programming languages, Programming environment {Assemblers, compilers, interpreters, linkers and loaders}. Developing and debugging flowcharts for programming problem.

(Lecture-12)

Unit - II: Fundaments of C programming: Overview of C - Various constructs of C program, coding style, data types, constants and variables, expressions and operators, basic input/output operations and formatting characters, decision making and branching, looping constructs, Arguments to main, Enumerations and bits fields, typedef, type casting, Storage class.

(Lecture-12)

Unit-III: Array and their Applications: Arrays {one dimensional and multidimensional array}, String Handling, Searching (Linear and binary) and sorting (selection, bubble, insertion) techniques, matrices operations.

(Lecture-12)

Unit-IV: Advanced Programming Concepts: Structures and union, Functions {Standard and User defined function, parameter passing, scope rules}, Recursion {Using recursion, conversion of recursive program to non-recursive}. Dynamic memory allocation and pointer {Uses, pitfalls, pointer to various user defined and standard data types}.

(Lecture-12)

Unit –V: More Advanced Programming Concepts: Pre-processors {define, include, macro's, ifdef…}.Introduction to file handling. Header files creation, introduction to Graphics.

Learning Outcome:

After Completion of the course, the student will be able to

- Have Knowledge of Programming types, Problem solving concepts, usage of Algorithm/ Flowchart.
- Writing, compiling and debugging programs in C language.
- Students will learn how to design structure of c programs, using tokens.
- Formatted and unformatted I/O, control statement and Looping. Design programs containing decision structures.

Required Text(s):

- B.W. Kerighan & D.M. Ritchie, The C programming Language, 2nd Edition Prentice Hall,1998.
- Herbert Schildt, C++ The Complete Reference, 4th Edition McGraw-Hill 2000.
- Yashavant Kanetkar, Let Us C, 8th Edition, Infinity Science Press 2008.
- Ashok N. Kamthane, "Programming with ANSI and Turbo C", Pearson Education.

PGDCA Semester - I
PGDCA315P - Practical & Viva Voce

Course Content:

LABORATORY
(Programming & Problem Solving Through "C)

1. Write a C program to find sum and average of three numbers.
2. Write a C program to find the sum of individual digits of a given positive integer.
3. Write a C program to generate the first n terms of the Fibonacci sequence.
4. Write a C program to generate prime numbers between 1 to n.
5. Write a C program to Check whether given number is Armstrong Number or Not.
6. Write a C program to evaluate algebraic expression (ax+b)/(ax-b)
7. Write a C program to check whether given number is perfect number or Not.
8. Write a C program to check whether given number is strong number or not.
9. Write a C program to find factorial of a given integer using non-recursive function.
10. Write a C program to find factorial of a given integer using recursive function.

(PC-SOFT)

1. Create a Document Using MS Word To Write a Letter To Your For Living Him For Your Birthday Party.
2. Use MS-Word To Insert a Table Into The Document.
3. Mail Merge Using MS-Word.
4. Create a Document Using MS Word For Making a Banner of Your Institute.
5. Create a Document Using Excel For Creating & Saving a Spreadsheet.
6. Creation & Printing a Pipe, Bar Chart & Ling Graph Using Excel.
7. Use Suitable Formulas To Sum & Derive Averages Using Excel.
8. Printing a Spreadsheet &Also Printing Any Part of It.
9. Create a Document To Generate An Ordered List and Unrecorded List.
10. Create a Document For Adding Fonts To Text, Heading Titles & Addition of Graphics. Formatting of Text.