

GOVT. COLLEGE FOR GIRLS, PALWAL, KURUKSHETRA

DEPARTMENT OF COMPUTER SCIENCE

LESSON PLAN (2025-26) (ODD SEM)

Name: Dr. Komal

Subject: Data Structure and Applications

Course/Semester – B.Sc/5th

Sub Code: B23-CSE-501

Week	Date	Topics To Be Covered
1	22.07.2025- 27.07.2025	UNIT-1: Data Structure: Defination, Data Type vs Data Structure, Classification of Data Structure, Data Structure Operations, Applications of Data Structure
2	28.07.2025- 03.08.2025	Algorithm Specifications: Performance Analysis and Measurement (Time and Space Analysis of Algorithms- Average, Best and Worst Case Analysis).
3	04.08.2025- 10.08.2025	Arrays: Introduction, Linear Arrays, Representation of Linear Array in Memory, Two Dimensional and Multidimensional Arrays, Sparse Matrix and its Representation,
4	11.08.2025- 17.08.2025	Operations on Array: Algorithm for Traversal, Selection, Insertion, Deletion and its implementation Assignment-1
5	18.08.2025- 24.08.2025	UNIT-2: String Handling: Storage of Strings, Operations on Strings viz., Length, Concatenation, Substring,
6	25.08.2025 – 31.08.2025	Insertion, Deletion, Replacement, Pattern Matching Linked List: Introduction, Array vs. linked list, Representation of linked lists in Memory,
8	01.09.2025 – 07.09.2025	Traversing a Linked List, Insertion, Deletion, Searching into a Linked list, Type of Linked List. Test-1
9	08.09.2025- 14.09-2025	UNIT-3: Stack: Array Representation of Stack, Linked List Representation of Stack, Algorithms for Push and Pop, Application of Stack: Polish Notation, Postfix Evaluation Algorithms.
10	15.09.2025 – 21.09.2025	Infix to Postfix Conversion, Infix to Prefix Conversion, Recursion. Introduction to Queues: Simple Queue,
11	22.09.2025 – 28.09.2025	Double Ended Queue, Circular Queue, Priority Queue, Representation of Queues as Linked List and Array,
12	29-.09.2025- 05.10.2025	Applications of Queue. Algorithm on Insertion and Deletion in Simple Queue and Circular Queue. Priority Queues. Assignment-2

13	06.10.2025- 12.10.2025	UNIT-4: Tree: Definitions and Concepts, Representation of Binary Tree, Binary Tree Traversal (Inorder, postorder, preorder),
14	13.10.2025- 19.10.2025	Binary Search Trees – Definition, Operations viz., searching, insertions and deletion; Searching and Sorting Techniques
15	20.10.2025- 26.10.2025	Diwali Break
16	27.10.2025- 02.11.2025	Sorting Techniques: Bubble sort, Merge sort, Selection sort, Quick sort, Insertion Sort. Searching Techniques: Sequential Searching, Binary Searching.
17	03.11.2025- 09.11.2025	Revision & Test
18	10.11.2025- 22.11.2025	Revision & Test
19	22.11.2025 onwards	Examination

REFERENCE BOOKS:

1. Eymour Lipschutz, Data Structure, Tata McGraw-Hill Publishing Company Limited.
2. Yedidyan Langsam, Moshe J. Augenstein and Aaron M. Tenenbaum, Data Structure using C, Pearson Education.

GOVT. COLLEGE FOR GIRLS, PALWAL, KURUKSHETRA

DEPARTMENT OF COMPUTER SCIENCE

LESSON PLAN (2025-26) (ODD SEM)

Name: Dr. Komal

**Subject: Knowledge of Basics of
Programming using Python**

Course/Semester – B.Sc/3rd

Sub Code: B23-CSE-304

Week	Date	Topics To Be Covered
1	01.09.2025 – 07.09.2025	UNIT-1 Introduction to Python: setting up Python environment, writing and executing Python scripts, variables and data types, input/output,
2	08.09.2025- 14.09-2025	type casting, comments, operators (arithmetic, relational, logical, assignment, bitwise, identity, membership) Assignment-1
3	15.09.2025 – 21.09.2025	UNIT-2 Control structures: conditional statements (if, if-else, elif), loops (for, while), loop control (break, continue, pass),
4	22.09.2025 – 28.09.2025	range and enumerate functions, nested loops, basic problem-solving using loops Test-1
5	29-.09.2025- 05.10.2025	UNIT-3 Functions: built-in functions, user-defined functions, function arguments and return values, scope and lifetime of variables
6	06.10.2025- 12.10.2025	recursion, lambda functions, modules and importing, creating and using custom modules Assignment-2
7	13.10.2025- 19.10.2025	UNIT-4 Data structures in Python: lists, tuples, sets, dictionaries, list/set/dictionary comprehensions,
8	20.10.2025- 26.10.2025	Diwali Break
9	27.10.2025- 02.11.2025	file handling: reading and writing text and CSV files, exception handling: try, except, finally, raising exceptions Test-2
10	03.11.2025- 22.11.2025	Revision & Test
11	22.11.2025 onwards	Examination

REFERENCE BOOKS:

1. **Mark Lutz**, *Learning Python*, O'Reilly Media
2. **Allen B. Downey**, *Think Python*, O'Reilly

GOVT. COLLEGE FOR GIRLS, PALWAL, KURUKSHETRA

DEPARTMENT OF COMPUTER SCIENCE

LESSON PLAN (2025-26) (ODD SEM)

Name: Dr. Komal

Subject: Operating System

Course/Semester – B.Sc/3rd

Sub Code: B23-CSE-301

Week	Date	Topics To Be Covered
1	22.07.2025- 27.07.2025	UNIT-1: Introductory Concepts: Operating System, Functions and Characteristics, Historical Evolution of Operating Systems, Operating System Structure.
2	28.07.2025- 03.08.2025	Types of Operating System: Real time, Multiprogramming, Multiprocessing, Batch processing. Operating System Services,
3	04.08.2025- 10.08.2025	Operating System Interface, Service System Calls, System Programs. Process Management: Process Concepts, Operations on Processes,
4	11.08.2025- 17.08.2025	Process States and Process Control Block. Inter-Process Communication. Assignment-1
5	18.08.2025- 24.08.2025	UNIT-2: CPU Scheduling: Scheduling Criteria, Levels of Scheduling, Scheduling Algorithms, Multiple Processor Scheduling, Algorithm Evaluation.
6	25.08.2025 – 31.08.2025	Synchronization: Critical Section Problem, Semaphores, Classical Problem of Synchronization, Monitors.
8	01.09.2025 – 07.09.2025	Deadlocks: Deadlock Characterization, Methods for Handling Deadlocks, Deadlock Prevention, Deadlock Avoidance, Deadlock Detection and Recovery. Test-1
9	08.09.2025- 14.09.2025	UNIT-3: Memory Management Strategies: Memory Management of SingleUser and Multiuser Operating System, Partitioning, Swapping,
10	15.09.2025 – 21.09.2025	Contiguous Memory Allocation, Paging and Segmentation;
11	22.09.2025 – 28.09.2025	Virtual Memory Management: Demand Paging, Page Replacement Algorithms, Thrashing. Assignment-2
12	29-.09.2025- 05.10.2025	UNIT-4: Implementing File System: File System Structure, File System Implantation, file operations,

13	06.10.2025- 12.10.2025	Type of Files, Directory Implementation, Allocation Methods, and Free Space Management.
14	13.10.2025- 19.10.2025	Disk Scheduling algorithm- SSTF, Scan, C- Scan, Look, C-Look. SSD Management. Test-2
15	20.10.2025- 26.10.2025	Diwali Break
16	27.10.2025- 09.11.2025	Revision & Seminars
17	10.11.2025- 22.11.2025	Revision & Test
18	22.11.2025 onwards	Examination

REFERENCE BOOKS:

1. Silberschatz A., Galvin P.B., and Gagne G., Operating System Concepts, John Wiley & Sons.
2. Godbole, A.S., Operating Systems, Tata McGraw-Hill Publishing Company, New Delhi.

GOVT. COLLEGE FOR GIRLS, PALWAL, KURUKSHETRA

DEPARTMENT OF COMPUTER SCIENCE

LESSON PLAN (2025-26) (ODD SEM)

Name: Dr. Komal

Subject: Linux and Shell Programming

Course/Semester – BCA/3rd

Sub Code: B23-CAP-302

Week	Date	Topics To Be Covered
1	22.07.2025- 27.07.2025	UNIT-1: Introduction to Linux: Linux distributions, Overview of Linux operating system, Linux architecture
2	28.07.2025- 03.08.2025	Features of Linux, Accessing Linux system, Starting and shutting down system
3	04.08.2025- 10.08.2025	Logging in and Logging out, Comparison of Linux with other operating systems. Assignment-1
4	11.08.2025- 17.08.2025	UNIT-2: Commands in Linux: General-Purpose commands, File oriented commands,
5	18.08.2025- 24.08.2025	directory oriented commands, Communication-oriented commands, process oriented commands, etc.
6	25.08.2025 – 31.08.2025	Regular expressions & Filters in Linux: Simple filters viz. more, wc, diff, sort, uniq, grep; Introducing regular expressions. Test-1
8	01.09.2025 – 07.09.2025	UNIT-3: Linux file system: Linux files, inodes and structure and file system,
9	08.09.2025- 14.09-2025	file system components, standard file system, file system types.
10	15.09.2025 – 21.09.2025	Processes in Linux: Starting and Stopping Processes Initialization Processes,
11	22.09.2025 – 28.09.2025	Mechanism of process creation, Job control in linux using at, batch, cron & time. Assignment-2
12	29-.09.2025- 05.10.2025	UNIT-4: Shell Programming: vi editor, shell variables
13	06.10.2025- 12.10.2025	I/O in shell, control structures, loops

14	13.10.2025- 19.10.2025	subprograms, creating & executing shell scripts in linux.
15	20.10.2025- 26.10.2025	Diwali Break
16	27.10.2025- 09.11.2025	Revision & Seminars
17	10.11.2025- 22.11.2025	Revision & Test
18	22.11.2025 onwards	Examination

REFERENCE BOOKS:

1. Yashwant Kanetkar, Unix & Shell programming – BPB Publications.
2. Richard Petersen, The Complete Reference – Linux, McGraw-Hill.

GOVT. COLLEGE FOR GIRLS, PALWAL, KURUKSHETRA

DEPARTMENT OF COMPUTER SCIENCE

LESSON PLAN (2025-26) (ODD SEM)

Name: Dr. Komal

Subject: Basics of Computer Science

Course/Semester – B.Sc/1st

Sub Code: B23-CSE-103

Week	Date	Topics To Be Covered
1	22.07.2025- 27.07.2025	UNIT-1: Introduction to Computers: Definition of Computers, History
2	28.07.2025- 03.08.2025	Generations of Computers, Characteristics of computer
3	04.08.2025- 10.08.2025	Classification of Computers. Fundamental Block diagram of Computer
4	11.08.2025- 17.08.2025	Detailed explanation of CPU, Input & Output Unit. Assignment-1
5	18.08.2025- 24.08.2025	UNIT-2: Software: Definition of Software
6	25.08.2025 – 31.08.2025	Types of Software-System software, Application software and Utility software
8	01.09.2025 – 07.09.2025	Types of Computer Languages, Assemblers, Interpreters, Compiler. Test-1
9	08.09.2025-14.09- 2025	UNIT-3: Introduction to Operating Systems: Types of Operating System, Functions of Operating System.
10	15.09.2025 – 21.09.2025	Windows: Introduction to Windows, Starting Windows, Desk Top, Task Bar, Opening and closing applications,
11	22.09.2025 – 28.09.2025	icons creating, renaming and removing. Date and Time setting,
12	29-.09.2025- 05.10.2025	Working with files and folders-creating, deleting, opening, finding, copying, moving, and renaming. Assignment-2
13	06.10.2025- 12.10.2025	UNIT-4: Networking: Concept, Basic Elements of a Communication System

14	13.10.2025- 19.10.2025	Data Transmission Media, LAN, MAN, WAN. Test-2
15	20.10.2025- 26.10.2025	Diwali Break
16	27.10.2025- 03.11.2025	Introduction of Internet and WWW, Basic working of a Web Browser
17	04.11.2025- 09.11.2025	Introduction to popular web browsers.
17	10.11.2025- 22.11.2025	Revision & Test
18	22.11.2025 onwards	Examination

REFERENCE BOOKS:

1. Fundamentals of Computers, V. Rajaraman 6th edition PHI Learning Private Limited 2014
2. Peter Norton: Computing Fundamentals. 6th Edition, McGraw Hill-Osborne,2007