

**LESSON PLAN OF DATA STRUCTURE & ALGORITHM FOR THE ACADEMIC SESSION: 2025-26
(WINTER-2025)**

Discipline : CE & IOT		Semester : 3RD	Name of the Teaching Faculty : Sri Paramananda Dash, Sr.Lect.CA.	
Subject : Data Structure and Algorithm.			THEORY	
			From date: 14/07/2025 to 15/11/2025 No.of weeks:-15	
WEEK	No.of classes/week-3	CHAPTER/UNIT	THEORY	
1 ST	1ST	UNIT-I	Basic terminology	
	2ND		Classification of Data Structure	
	3RD		Operations on Data Structure	
2 ND	1ST	INTRODUCTION TO DATA STRUCURE	Asymptotic and worst case analysis of Algorithms.	
	2ND			
	3RD			
3 RD	1ST	UNIT-II	Stacks and Introduction to stack.	
	2ND		Array representation of stacks.	
	3RD		Operations on Stacks. Applications of Stacks.	
4 TH	1ST	LINEAR DATA STRUCTURE	Infix to postfix transformation, Evaluation of postfix expression.	
	2ND		Queues, Array representation of Queues.	
	3RD		Operations on Queues. Types of Queues, Application of Queues.	
5 TH	1ST	UNIT-III LINKED LIST	Singly Linked List, Representation in Memory.	
	2ND		Operation on single link list, Double link list.	
	3RD		circular Linked List.	
6 TH	1ST		Linked List Representation.	
	2ND		Operation of Stacks.	
	3RD			
7 TH	1ST	UNIT-IV NON LINEAR DATA STRUCTURE	Operations of Queues.	
8 TH	1ST		Trees.	
	2ND		Basic Terminology.	
	3RD	Definition and concept of Binary Trees.		
9 TH	1ST		Representation of Binary trees using Arrays and Linked List.	
	2ND		Representation of Graphs.	
	3RD		Set, Linked, Matrix.	
10 TH	1ST		Graph Traversals.	
	2ND		Trees Basic terminology.	
	3RD		Definition and concepts of Binary Trees.	
11 TH	1ST	UNIT-V ALGORITHM PARADIGMS	Greedy.	
	2ND		Divide and Conquer.	
	3RD		Branch and Bound	
12 TH	1ST		Dynamic Programming and Backtracking.	
	2ND			
	3RD			
13 TH	1ST	UNIT VI SORTING	The Sorting Problems.	
	2ND		The sorting Problem.	
	3RD		Bubble sort. Selection Sort. Insertion Sort.	
14 TH	1ST	UNIT VII GRAPHS	Merge Sort. Quick Sort.	
	2ND		Searching. Binary Search Trees. Hash Table,	
	3RD		Definition of a directed and Undirected Graphs.	
15 TH	1ST		Paths Cycles.	
	2ND		Spanning Trees.	
	3RD		Directed Acyclic graphs.	
			Topological sorting.	
			Spanning Tree algorithms. Dijkstra's Algorithm.	

Signature of the faculty

P. Dash
14/11/25
P. Dash, Sr. Lect. CA

LESSON PLAN OF DIGITAL ELECTRONICS AND COMPUTER ORGANIZATION FOR THE ACADEMIC SESSION 2025-26 (WINTER-2025)

Discipline:- CE & IOT		Semester:- 3rd	Name of the Teaching Faculty:-Sri Paramananda Dash, Sr.Lecturer,C.A.	
Subject:- Digital Electronics and Computer Organization.			From Date:-14/07/2025 to 15/11/2025	No of Weeks :-15
Week	No of Classes/week-3	Chapter/Unit	Theory	
1st	1 ST	UNIT-1	1. Difference between analog and digital signals. 2.Number Systems(Binary, Octal, Decimal, Hexadecimal) 3. Conversion between Number System. 4. Boolean Algebra. 5. Laws and Simplification 6. Basic operations.	
	2 ND			
	3 RD			
2nd	1 ST	INTRODUCTION TO DIGITAL ELECTRONICS		
	2 ND			
	3 RD			
3rd	1 ST	UNIT-2	1. Intro. to all Logic Gates. 2. Design and simplification of logic circuits. 3. Circuits Using Logic gates. 4. Karnaugh Maps. 5. Simplification of Boolean algebra using K Maps. 6. Application of logic gates in real world circuits.	
	2 ND			
	3 RD			
4th	1 ST	LOGIC GATES AND CIRCUITS		
	2 ND			
	3 RD			
5th	1 ST	UNIT-3	1. Multiplexers. 2. De Multiplexers. 3. Encoders and Decoders. 4. Flip Flops (SR, JK, D,T) and their application. 5.Synchronous and asynchronous Counters 6. Shift Registers types and uses.	
	2 ND			
	3 RD			
6th	1 ST	COMBINATIONAL AND SEQUENTIAL CIRCUITS		
	2 ND			
	3 RD			
7th	1 ST	UNIT-4	1.Basic structure of a computer. 2.CPU,Memory 3.Input/Output Devices. 4.Instruction Cycles. 5.Fetch,Decode,Execute 6.Memory Organization. 7.Address Bus, Data bus, Control Bus.	
	2 ND			
	3 RD			
8th	1 ST	FUNDAMENTALS OF COMPUTER ORGANIZATION		
	2 ND			
	3 RD			
9th	1 ST			
	2 ND			
	3 RD			
10th	1 ST	UNIT-5	1. Introduction to Microprocessor and Micro Controllers. 2. Basics of ALU and control units. 3.Instruction set Architecture 4. RISC vrs CISC Pipelining. 5. Performance optimization in Processors.	
	2 ND			
	3 RD			
11th	1 ST	PROCESSOR ARCHITECTURE AND CONTROL		
	2 ND			
	3 RD			
12th	1 ST			
	2 ND			
	3 RD			
13th	1 ST	UNIT-6	1.I/O devices and Interfaces, Keyboard, Mouse, Printers. 2. Interrupts and DMA. 3. Multicore Processors. 4. GPUs. 5. Embedded Systems. 6. Design a simple Circuit/Simulate a Basic CPU.	
	2 ND			
	3 RD			
14th	1 ST	INPUT/OUTPUT SYSTEMS AND ADVANCED TOPICS		
	2 ND			
	3 RD			
15th	1 ST			
	2 ND			
	3 RD			

Signature of the Faculty

P. Dash, Sr. Lect. CA.

LESSON PLAN OF PROGRAMMING WITH PYTHON FOR THE ACADEMIC SESSION: 2025-26 (WINTER-2025)

Discipline : Information Technology	Semester : 3RD	Name of the Teaching Faculty : Sri Paramananda Dash, Sr.Lect.CA.	
Subject : Programming with Python.		THEORY	
		From date: 14/07/2025 to 15/11/2025	
		No.of weeks:-15(excluding holidays)	
WEEK	No.of classes/week-3	CHAPTER/UNIT	THEORY
1 ST	1ST	UNIT-I	Overview of Python.
	2ND		Features & applications.
	3RD		Python Syntax.
2 ND	1ST	INTRODUCTION TO PYTHON	Variables,
	2ND		Data Types.
	3RD		Writing, Executing and Debugging Python scripts.
3 RD	1ST	UNIT-II	Conditional Statements
	2ND		If, else, elif
	3RD		Loops. For, While,
4 TH	1ST	Control Structures and Functions	Nested Loops.
	2ND		Functions.
	3RD		Calling and scope of Variables. Introduction to Lambda functions and Recursions.
5 TH	1ST	UNIT-III Data Structure in Python	Lists. Tuples, Sets and Dictionaries.
	2ND		Operations and Applications.
	3RD		List comprehensions and Dictionary
6 TH	1ST		Working with strings.
	2ND		Methods and Manipulations.
	3RD		Introduction to Python's Collections Module.
7 TH	1ST	UNIT-IV File Handling and Modules	
8 TH	1ST		File operations
	2ND		Reading Writing and appending files
	3RD		Working with CSV JSON files.
9 TH	1ST		Python Modules.
	2ND		Built-in-Modules.
	3RD		Creating and using Custom Modules.
10 TH	1ST		
	2ND		
	3RD		
11 TH	1ST	UNIT-V Object Oriented Programming in Python	Understanding Classes and Objects.
	2ND		Concepts of Encapsulation.
	3RD		Inheritance
12 TH	1ST		Polymorphism. Working with Magic Methods. Operator Overloading. Exception Handling.
	2ND	UNIT VI Advanced Python and Applications	Introduction to Libraries.
	3RD		Numpy
13 TH	1ST		Pandas
	2ND		Matplotlib Basics of Web scraping
	3RD		Using requests and BeautifulSoup,
14 TH	1ST		Scripting for Automation.
	2ND		Working with OS and shutil Modules.
	3RD		Mini Projects.
15 TH	1ST		Developing real world problems
	2ND		
	3RD		

Signature of the faculty

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