

GOVERNMENT POLYTECHNIC, DEBAGADA
 AT/PO- PURUNAGARH, DIST-DEOGARH, ODISHA, 768119
 WEBSITE: www.gpdeogarh.org.in | EMAIL: principaldeogarh@gmail.com
DEPARTMENT OF MATH AND SCIENCE
LESSON PLAN (2026-27)

Discipline: CIVIL		Year: 1st	Name of the Teaching faculty: Abhilipsa Mishrra
Subject: FUNDAMENTALS OF COMPUTER & AI		No of Days/ Week class allotted: 2	Semester from Date: 17/08/26 To Date: 05/04/27 No of weeks: 32
Week	Class Day	Topics	
1st	1st	Syllabus discussion Unit 1: Basic Organization of computer: Introduction to Computer	
	2nd	Unit 1: Basic Organization of computer: Functional block diagram of computer - Architecture Overview	
2nd	1st	Unit 1: Basic Organization of computer: Input units: Keyboard, Mouse, Scanner, Joystick	
	2nd	Unit 1: Basic Organization of computer: Output units: Monitor, Printer, Speaker & Display Technologies	
3rd	1st	Unit 1: Basic Organization of computer: CPU Structure & Operations: ALU (Arithmetic Logic Unit)	
	2nd	Unit 1: Basic Organization of computer: CPU Structure & Operations: Control Unit & Register Sets	
4th	1st	Unit 1: Basic Organization of computer: Memory Systems: Primary Memory (RAM, ROM, Cache Memory)	
	2nd	Unit 1: Basic Organization of computer: Secondary Memory: HDD, SSD	
5th	1st	Unit 1: Basic Organization of computer: Memory Hierarchy: Speed, Cost, Capacity Trade-offs	
	2nd	Unit 1: Basic Organization of computer: Unit 1 Review & Practice Questions	
6th	1st	Unit 2: Computer software: Types of software: System software, Application software, Utility software	
	2nd	Unit 2: Computer software: What is Operating Systems: Definition, Role, & Importance	
7th	1st	Unit 2: Computer software: Functions of Operating Systems: Process & Memory Management	
	2nd	Unit 2: Computer software: Functions of Operating Systems: File System & Device Management	
8th	1st	Unit 2: Computer software: Types of OS: GUI CUI, Multi-programmed	
	2nd	Unit 2: Computer software: Timesharing & Real-time OS	
9th	1st	Unit 2: Computer software: Computer Virus: Definition, Mechanism, Boot Sector Virus, Macro Virus	
	2nd	Unit 2: Computer software: Computer Virus: Memory Resident Virus, Polymorphic Virus, File Infector Virus	

10th	1st	Unit 2: Computer software: Anti-virus softwares: Working principles, Scanning techniques & Prevention of Virus
	2nd	Unit 1 & Unit 2 Revision: Comprehensive Revision of Unit 1 & Unit 2 for Internal Assessment-1
11th	1st	Assessment & Evaluation: Internal Assessment - 1 (Covers Unit-1 & Unit-2)
	2nd	Assessment Feedback: Discussion & Analysis of Internal Assessment-1 Answer Scripts
12th	1st	Unit 3: Computer Networks and Internet: Basic concept of computer networking: Definition, Advantages & Topology
	2nd	Unit 3: Computer Networks and Internet: Types of Networks: PAN, LAN, MAN, WAN (Characteristics & Scope)
13th	1st	Unit 3: Computer Networks and Internet: Transmission media: Guided/Wired (Twisted Pair, Coaxial, Fiber)
	2nd	Unit 3: Computer Networks and Internet: Transmission media: Unguided/Wireless media (Radio, Microwave, Infrared)
14th	1st	Unit 3: Computer Networks and Internet: Networking Devices: Hub, Switch, Router (Definitions & Functions)
	2nd	Unit 3: Computer Networks and Internet: Basic concept of Internet, ISP, Web Browser, and Search Engines
15th	1st	Unit 3: Computer Networks and Internet: Internet Services: E-Mail & World Wide Web (WWW) protocols
	2nd	Unit 3: Computer Networks and Internet: Internet Services: Chatting, Conferencing, Online Shopping & Security
16th	1st	Unit 3: Computer Networks and Internet: Awareness about Digital India Portals (State and National Portals)
	2nd	Unit 3: Computer Networks and Internet: Unit 3 Wrap-up & Network Troubleshooting Scenarios
17th	1st	Unit 4: Problem Solving Methodology: Algorithm: Definition, Characteristics, Steps to develop Algorithms
	2nd	Unit 4: Problem Solving Methodology: Flowchart: Symbols, Rules, and Structuring Logic
18th	1st	Unit 4: Problem Solving Methodology: Examples of Problem solving through Flowchart: Sum and Average of 5 numbers
	2nd	Unit 4: Problem Solving Methodology: Examples of Flowchart: Program to find the greatest number among two numbers
19th	1st	Unit 4: Problem Solving Methodology: Examples of Flowchart: Program to check if input number is even or odd
	2nd	Unit 4: Problem Solving Methodology: Examples of Flowchart: Program to find average of n numbers using for loop

20th	1st	Unit 4: Problem Solving Methodology: Examples of Flowchart: Program to find the factorial of a number
	2nd	Unit 4: Problem Solving Methodology: Complex Problem Solving & Flowchart Validation
21st	1st	Unit 3 & Unit 4 Revision: Comprehensive Revision of Unit 3 & Unit 4 for Internal Assessment-2
	2nd	Assessment & Evaluation: Internal Assessment - 2 (Covers Unit-3 & Unit-4)
22nd	1st	Assessment Feedback: Discussion & Feedback on Internal Assessment-2 Performance
	2nd	Unit 5: Python Essentials: Basic Python Syntax, Features, Execution Modes & Environment Setup
23rd	1st	Unit 5: Python Essentials: Input and Print Statements (input(), print(), formatting)
	2nd	Unit 5: Python Essentials: Variables & Constants, Naming Conventions & Memory Allocation
24th	1st	Unit 5: Python Essentials: Data Types: Primitive types (int, float, string) & Type Conversion
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28th	1st	Unit 6: Introduction to AI & Fundamentals of AI: Definition of Artificial Intelligence (AI) & Historical Context
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30th	1st	Unit 6: Introduction to AI & Fundamentals of AI: Definition of Generative AI, LLMs & Creative Applications
	2nd	Unit 6: Introduction to AI & Fundamentals of AI: Definition of Machine Learning (ML) vs Deep Learning (DL) & AI Hierarchy
31st	1st	Unit 5 & Unit 6 Revision: Comprehensive Revision of Unit 5 & Unit 6 for Internal Assessment-3
	2nd	Assessment & Evaluation: Internal Assessment - 3 (Covers Unit-5 & Unit-6)

32nd	1st	Grand Revision & End Exam Prep: Full Syllabus Revision (Unit 1 to Unit 4 & Unit 6 as per End Exam Pattern)
	2nd	Final Assessment Guidance: End Exam Strategy, Previous Years Questions & Doubts Clearing

COURSE OUTCOMES:

After completion of the course, the students will be able to:

CO1	Understand basic computer organization, CPU architecture, memory systems, and I/O devices.
CO2	Classify operating systems, software types, and computer security concepts.
CO3	Explain computer networking basics, transmission media, network devices, and internet protocols.
CO4	Apply problem-solving techniques using algorithms and flowcharts.
CO5	Write and debug Python programs using control structures, loops, and standard syntax.
CO6	Explain core principles of Artificial Intelligence, Machine Learning, and Generative AI applications.

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	2nd	Unit 5: Python Essentials: Loops in Python: 'while' loop, break, continue & nested loops
27th	1st	Unit 5: Python Essentials: Python Program Implementation: Factorial, Even/Odd, Average using Python
	2nd	Unit 5: Python Essentials: Unit 5 Practice & Code Debugging Exercises
28th	1st	Unit 6: Introduction to AI & Fundamentals of AI: Definition of Artificial Intelligence (AI) & Historical Context
	2nd	Unit 6: Introduction to AI & Fundamentals of AI: Goals and Characteristics of AI (Turing Test, Intelligence Types)
29th	1st	Unit 6: Introduction to AI & Fundamentals of AI: Importance and Applications of AI across Industries (Healthcare, Finance)
	2nd	Unit 6: Introduction to AI & Fundamentals of AI: AI in Daily Life: Smart Assistants, Recommendation Systems, Automation
30th	1st	Unit 6: Introduction to AI & Fundamentals of AI: Definition of Generative AI, LLMs & Creative Applications
	2nd	Unit 6: Introduction to AI & Fundamentals of AI: Definition of Machine Learning (ML) vs Deep Learning (DL) & AI Hierarchy
31st	1st	Unit 5 & Unit 6 Revision: Comprehensive Revision of Unit 5 & Unit 6 for Internal Assessment-3
	2nd	Assessment & Evaluation: Internal Assessment - 3 (Covers Unit-5 & Unit-6)

32nd	1st	Grand Revision & End Exam Prep: Full Syllabus Revision (Unit 1 to Unit 4 & Unit 6 as per End Exam Pattern)
	2nd	Final Assessment Guidance: End Exam Strategy, Previous Years Questions & Doubts Clearing

COURSE OUTCOMES:

After completion of the course, the students will be able to:

CO1	Understand basic computer organization, CPU architecture, memory systems, and I/O devices.
CO2	Classify operating systems, software types, and computer security concepts.
CO3	Explain computer networking basics, transmission media, network devices, and internet protocols.
CO4	Apply problem-solving techniques using algorithms and flowcharts.
CO5	Write and debug Python programs using control structures, loops, and standard syntax.
CO6	Explain core principles of Artificial Intelligence, Machine Learning, and Generative AI applications.

Signature of Faculty