

Academic Lesson Plan of Winter 2026

Department : CSE	Semester :5TH	Name of the teaching faculty: NALINIKANTA MOHAPATRA
Subject: Advanced Computer Networks	No. of days/per week class allotted . 3p/week.	Semester from : 1ST July 2026
		No. of weeks:15 weeks
		Topics to be covered:
1 st week	1 st	Overview of Computer Networks and Evolution
	2 nd	Overview of Computer Networks and Evolution
	3 rd	Network Architectures
2 nd week	1 st	Client Server vs. Peerto-Peer
	2 nd	Client Server vs. Peerto-Peer
	3 rd	TCP/IP Models: Detailed Study
3 rd week	1 st	TCP/IP Models: Detailed Study
	2 nd	Addressing Mechanisms: IPv4, IPv6, Subnetting and Supernetting
	3 rd	Addressing Mechanisms: IPv4, IPv6, Subnetting and Supernetting
4 th week	1 st	Switching Techniques
	2 nd	Circuit, Packet, and Virtual Circuit Switching
	3 rd	Circuit, Packet, and Virtual Circuit Switching
5 th week	1 st	Network Routing Algorithms: 9 19 Distance Vector
	2 nd	Network Routing Algorithms: 9 19 Distance Vector
	3 rd	Link State
6 th week	1 st	Static vs. Dynamic Routing
	2 nd	Routing Protocols: RIP, OSPF
	3 rd	Routing Protocols: RIP, OSPF
7 th week	1 st	Basics of Wireless Communication
	2 nd	Wi-Fi, Bluetooth, and Cellular Networks (2G, 3G, 4G, 5G)
	3 rd	Wi-Fi, Bluetooth, and Cellular Networks (2G, 3G, 4G, 5G)
8 th week	1 st	Wireless LANs: IEEE 802.11 Standards
	2 nd	Wireless LANs: IEEE 802.11 Standards
	3 rd	Wireless LANs: IEEE 802.11 Standards
9 th week	1 st	Mobile IP and Handoff Mechanisms
	2 nd	Mobile IP and Handoff Mechanisms
	3 rd	Mobile IP and Handoff Mechanisms
10 th week	1 st	Security Challenges in Modern Networks
	2 nd	Security Challenges in Modern Networks
	3 rd	Symmetric and Asymmetric Cryptography
11 th week	1 st	Symmetric and Asymmetric Cryptography
	2 nd	Network Authentication Mechanisms
	3 rd	Firewalls
12 th week	1 st	Firewalls
	2 nd	VPNs
	3 rd	IDS/IPS
13 th week	1 st	Introduction to SDN: Concepts and Benefits
	2 nd	Introduction to SDN: Concepts and Benefits
	3 rd	OpenFlow and SDN Controllers
14 th week	1 st	OpenFlow and SDN Controllers
	2 nd	Virtualization in Networking (NFV)
	3 rd	Virtualization in Networking (NFV)
15 th week	1 st	Cloud Computing and Network Virtualization
	2 nd	Edge and Fog Computing
	3 rd	Edge and Fog Computing

COURSE OUTCOMES

CO.1	Explain advanced computer network concepts, architectures, OSI and TCP/IP models, and IP addressing schemes including IPv4, IPv6, subnetting, and supernetting.
CO.2	Analyze switching techniques, routing algorithms, and routing protocols to understand efficient data communication in computer networks.
CO.3	Describe the principles and technologies of wireless and mobile networks, including Wi-Fi, Bluetooth, cellular networks, and mobility management.
CO.4	Apply network security concepts and cryptographic techniques to secure communication using authentication, firewalls, VPNs, and intrusion detection/prevention systems.
CO.5	Evaluate modern networking paradigms such as Software-Defined Networking (SDN), Network Function Virtualization (NFV), cloud networking, and edge/fog computing for scalable network solutions.



Signature of Faculty



HOD, CSE