



**ST. VINCENT PALLOTTI COLLEGE OF ENGINEERING & TECHNOLOGY, NAGPUR**  
(An autonomous institution affiliated to Rashtrasant Tukadoji Maharaj Nagpur University)  
**B. Tech. Scheme of Examination & Syllabus 2023-24**  
**COMPUTER ENGINEERING**

**SIXTH SEMESTER**

Course Code	Course Name	Th	Tu	Pr	Credits	Evaluation		
CE601T	Advanced Computer Networks	3	-	-	3	CA	ESE	Total
						30	70	100

Course Objectives	Course Outcomes
<p>This course is intended</p> <ul style="list-style-type: none"> <li>To gain understanding of various aspects of Computer Network and explore the functions of related protocols.</li> <li>To enable the students to understand the importance of using cloud computing services via Internet.</li> </ul>	<p>Student will be able to</p> <ul style="list-style-type: none"> <li>Understand the brief history of the Internet.</li> <li>Interpret and analyse TCP protocol.</li> <li>Understand the concepts of network addressing through problem solving.</li> <li>Interpret the various functions of UDP protocol.</li> <li>understand cloud computing fundamentals &amp; AWS service knowledge.</li> </ul>

**Unit I** **[7Hrs]**

TCP/IP protocol suite: layers in TCP/IP model, Comparison between OSI and TCP/IP model, Internet Standards, Internet Administration, Review of Underlying Technologies: Wired LAN: frame structures of IEEE 802.3, 802.4, FDDI, Wireless LAN: IEEE 802.11, Switched WAN: X.25, Frame Relay and ATM.

**Unit II** **[8Hrs]**

TCP segment format, TCP connection & State transition diagram, Flow & error control, congestion control, TCP timers, TCP timeout and Retransmission, Introduction to SCTP.

**Unit III** **[7Hrs]**

IPv4 addresses: address structure, CIDR: Subnet and Supernetting, special address conventions, IPv6 addressing: Addressing and Packet Format, Transition from IPv4 to IPv6.

**Unit IV** **[8Hrs]**

UDP header format, UDP messages, UDP services, UDP applications, UDP package, UDP checksum calculation, Unicast Routing protocols, Multicast routing protocol: MOSPF, MDVRP

**Unit V** **[7Hrs]**

AWS & Cloud Computing: Introduction to cloud computing, Cloud computing Deployment models, Introduction to AWS, Introduction to Simple Storage Service: S3, Creating Bucket on AWS, Uploading data in Bucket, VPC & Subnets, Elastic Compute Cloud: EC2, IAM

**Text Books**

S.N	Title	Authors	Edition	Publisher
1	Data Communications and Networking	Behrouz A Forouzan	Fourth Edition	McGraw Hil
2	Internetworking with TCP/IP principles protocols, and architectures	Douglas E. Comer	Fourth Edition	Prentice Hall
3	TCP/IP Protocol Suite	Behrouz A Forouzan	Fourth Edition	McGraw Hil
4	Cloud Computing : A Hands on Approach	Bahga, Arshdeep Medishetti, Vijay	-	Univ. Press India Pvt. Ltd
5	Aws Certified Sysops Administrator : Official Study Guide	Cole, Stephen Digby, Gareth Fitch, Chris Fiedberg, Steve	-	Wiley India Pvt. Ltd

**Reference Books**

S.N	Title	Authors	Edition	Publisher
1	Data and Computer Communication	William Stallings	Second Edition	McGraw Hil
2	A Course in Computer Networks	Dr. Sanjay Sharma	Third Edition	Katson Books
3	Computer Networks and Internet with Internet Applications	Douglas E. Comer	Fourth Edition	Prentice Hall
4	Computer Networking: A Top Down Approach	Kurose, Ross	Seventh Edition	Pearson

		July 2023	1.2	Applicable for 2023-24
Chairman - BoS	Dean – Academics	Date of Release	Version	