

Computer Networking

Viva

Syllabus and Schedule

	Topics	Book/Reference
Topic 1 (Optional)	<p><i>Introduction: Computer Networks and the Internet:</i> Data Communication, Data Flow, Networks, Network Criteria, Types of Connections, Network Topology, Network Types, Circuit Switching, Packet Switching, Internetworking, Internet, Network Structure.</p> <p><i>Network Model:</i> Protocol Layering, TCP/IP Protocol Suite, OSI Model</p>	<p>Lecture: 1_Introduction Chapter 1: Section 1.1, 1.2, 1.3 (Book: Data Communications and Networking – Forouzan; 5th Edition)</p> <p>Lecture: 2_Network Model Chapter 2: Section 2.1, 2.2, 2.3 (Book: Data Communications and Networking – Forouzan; 5th Edition)</p>
Topic 2 (Mandatory)	<p><i>Application Layer:</i> Principles of Network Applications, The web and HTTP, Cookies, FTP, SMTP, POP3, IMAP, DNS, Socket Programming.</p>	<p>Lecture: 3_Application Layer Chapter 2 Section 2.1, 2.2, 2.3, 2.4, 2.5, 2.7 (Book: Computer Networking: A Top-down Approach – J.F. Kurose and K.W. Ross; 6th Edition)</p>
Topic 3 (Optional)	<p><i>Transport Layer:</i> Transport Layer, TCP, UDP.</p>	<p>Lecture: 4_Transport Layer CCNA1 Chapter 7: Transport Layer</p>

	Topics	Book/Reference
Topic 4 (Mandatory)	<i>Network Layer:</i> Introduction, Network Layer Protocols, IPv4, IPv6, Routing, Default Gateway, Host Routing Tables, Router Routing Tables, Static Routing, Dynamic Routing.	Lecture: 5_1_Network Layer CCNA1 Chapter 6: Network Layer
Topic 5 (Mandatory)	<i>Network Layer: Switching</i> Packetizing, Routing and Forwarding, Packet Switching, Datagram, Virtual-Circuit, Network Performance: Delay, Throughput, Packet loss	Lecture: 5_2_Network Layer_Switching Chapter 18: Intro. to Network Layer Section 18.1, 18.2, 18.3 (Book: Data Communications and Networking – Forouzan; 5 th Edition)
Topic 6 (Mandatory)	<i>IP Addressing:</i> IPv4 Network Addresses, Classful Addressing, Classless Addressing, Prefix Length, Private Address, Public Address, IPv6 Network Addresses, ICMP <i>Subnetting:</i> Concept only.	Lecture: 6_IP Addressing CCNA1 Chapter 8: IP Addressing Lecture: 7_Subnetting CCNA1 Chapter 9: Subnetting IP Networks Chapter 18: Intro. to Network Layer Section 18.4 (Book: Data Communications and Networking – Forouzan; 5 th Edition)

	Topics	Book/Reference
Topic 7 (Mandatory)	<p><i>Data Link Layer:</i> Ethernet, Ethernet Protocol, LLC and MAC Sub layers, Ethernet Operation, CSMA, CSMA/CD, CSMA/CA, Ethernet Frame, Ethernet Switching.</p> <p><i>Address Resolution:</i> ARP</p>	<p>Lecture: 8_Data Link Layer CCNA 1 (v7.0) Chapter 6: Data Link Layer CCNA1 (v7.0) Chapter 7: Ethernet Switching</p> <p>Lecture: 9_Address Resolution_IP_MAC_ARP CCNA1 (v7.0) Chapter 9: Address Resolution</p>

Instruction: In your viva, you will be asked questions from mandatory topics (Topic 2, Topic 4 - 7). Topic 1 and Topic 3 are optional sections. You only need to prepare for one optional topic section (either Topic 1 or Topic 3).