

TECNIA INSTITUTE OF ADVANCED STUDIES
GRADE 'A' INSTITUTE
Department of Information Communication & Technology
COURSE PLAN
ACADEMIC SESSION 2024-25

As per Scheme of Examination & Syllabi for Bachelor of Computer Application Scheme & Syllabus (w.e.f Academic Session 2021-2022 onwards); Guru Gobind Singh Indraprastha University, New Delhi.

PROGRAMME CODE :	020	PROGRAMME :	Bachelor of Computer Applications (BCA)	SHIFT :	1st														
COURSE CODE :	BCA-201	COURSE NAME :	Computer Network	SECTION :	A														
		COURSE TYPE :	Core Course Theory (CCT)	FACULTY :	Mr. Abhishek Kumar Maheshwari														


LEARNING OBJECTIVES: The paper aims to understand the Importance, limitations and challenges of processes involved in software development. In this course, the learners will be able to develop expertise related to the following:


- To gain knowledge of various software models.
- To gain knowledge of various software design activities.
- To learn cost estimation, software testing, Maintenance and debugging

PREREQUISITE: 1. None

COURSE OUTCOME & MAPPING, COURSE ARTICULATION

		COMMUNICATION SKILLS :	USE OF SOFTWARE TOOLS :	TECHNICAL SKILLS :	DOMAIN AWARENESS :	TECHNICAL SUPPORT :	ANALYSIS AND INVESTIGATION OF COMPLEX COMPUTING PROBLEMS :	DESIGN / DEVELOPMENT OF SOLUTIONS :	IMBIBE CYBER ETHICS :
		The student should be able to communicate the technical information both orally and in writing professionally.	Create, select, adapt and apply suitable tools and technologies to a wide range of computational activities.	Acquire necessary knowledge of technical, scientific as well as basic managerial and financial procedures to analyze and solve real world problems within their work domain.	Clarity on both conceptual and application oriented skills in commerce, Finance & Accounting and its Applications in Business context.	Must be able to provide technical support for various software applications.	Ability to analyze research and investigate complex computing problems through design of experiments, analysis and interpretation of data and synthesis of the information to arrive at valid conclusions.	Apply the knowledge gained in core courses to a broad range of advanced topics in computer science, to learn and develop sophisticated technical products dependently.	Awareness on ethics, values, sustainability and creativity aspects of technical solutions.
CO - PO MAPPING		COMMUNICATION SKILLS	USE OF SOFTWARE TOOLS	TECHNICAL SKILLS	DOMAIN AWARENESS	TECHNICAL SUPPORT	ANALYSIS AND INVESTIGATION OF COMPLEX COMPUTING PROBLEMS	DESIGN / DEVELOPMENT OF SOLUTIONS	IMBIBE CYBER ETHICS
		PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
CO1	Understand the basics conceptual math and relations	3	2	2	2	2	2	2	1
CO2	Understand and apply partial order and recurrence relation and their operations	2	3	2	1	2	2	2	1
CO3	Compare and design, sorting and hashing techniques.	2	1	2	2	1	2	2	2
CO4	Appraise and determine the correct logic and solutions for any given real world problem.	1	2	2	1	2	2	1	1
Course Articulation (Average)		2	2	2	1.5	1.75	2.0	1.8	1.25


 (Mr. Abhishek Kumar Maheshwari)
 TIAS-ICT


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S. No.	Lecture No.	Unit No.	Topic	Sessional Outcome	Experiential Learning	Participative Learning	Problem Solving Methodologies	ICT Tools & E-Resources Utilization	Mapping with CO	Class Material (PPT Faculty/Students)	Additional Material	Mode of Assessment	Status
1	L1	1	Components of Data Communication	Understand the basics of computer networks and components of data communication		Lecture Through PPT		https://www.youtube.com/watch?v=InUzW3NEEQ&list=PL6RMh0VUhmGpeFl0B7xyA40EptH1up&index=2	CO1	PPT_1	https://www.ibm.com/topics/networking	Viva Voce	
2	L2	1	Distributed Processing	Describe distributed processing and line configuration techniques in computer networks		Lecture Through PPT		https://aws.amazon.com/what-is/distributed-computing/	CO1	PPT_2	https://www.ibm.com/docs/en/tseries/8.2?topic=overview-what-is-distributed-computing	Numerical Problem	
3	L3	1	Transmission Mode and Categories of Networks	Distinguish among Simplex, Half-Duplex and Full Duplex modes	Demonstration	Lecture Through PPT	Case study	https://www.nielit.gov.in/gorakhpur/sites/default/files/Gorakhpur/Olevel_ICT_2_14MAY_AB.pdf	CO1, CO4	PPT_3	http://www.impcollege.org/Adminpanel/AdminUpload/StudyMaterial/Transmission%20Modes%20in%20Computer%20Network%20topology/index.html#mesh_network_topology	Role Play	
4	T1	1	Basics of Computer Network, Distributed Processing, Transmission Mode & Categories (Tutorial of Lecture 1,2 &3)	Student will understand Basics of Computer Networks		Discussion/ Doubt Clearing session		https://www.nielit.gov.in/gorakhpur/sites/default/files/Gorakhpur/Olevel_ICT_2_14MAY_AB.pdf	CO1, CO4	PPT_3	http://www.impcollege.org/Adminpanel/AdminUpload/StudyMaterial/Transmission%20Modes%20in%20Computer%20Network%20topology/index.html#mesh_network_topology	Role Play	
5	L4	1	Layers & Functions of OSI	Differentiate among Bus, Mesh and Tree topologies	Mini projects	Lecture Through PPT		https://cse.usf.edu/network/chap5/chap5.html#LinearBusnetwork	CO4	PPT_4	https://www.cse.wustl.edu/~jain/cse567-08/fp/topology/index.html#mesh_network_topology	Numerical Problem	
6	L5	1	Layers & Functions of TCP/IP Models	Students will understand TCP/IP Models		Lecture Through PPT		https://cse.usf.edu/network/chap5/chap5.html#LinearBusnetwork	CO4	PPT_4	https://www.cse.wustl.edu/~jain/cse567-08/fp/topology/index.html#mesh_network_topology	Numerical Problem	
7	L6	1	Comparison of models	Compare the characteristics of Ring, Star and Hybrid topologies		Lecture Through PPT		https://cse.usf.edu/network/chap5/chap5.html#StarNetwork	CO4	PPT_5	https://www.cse.wustl.edu/~jain/cse567-08/fp/topology/index.html#ring_network_topology	Role Play	
8	T2	1	Layers & Functions of OSI & TCP/IP Models, Comparison of models (Tutorial of Lecture 4,5 &6)	Student will understand Basics of Computer Networks		Discussion/ Doubt Clearing session		https://cse.usf.edu/network/chap5/chap5.html#StarNetwork	CO4	PPT_5	https://www.cse.wustl.edu/~jain/cse567-08/fp/topology/index.html#ring_network_topology	Numerical Problem	
9	L7	1	Guided and unguided Transmission Media	Distinguish among LAN, MAN, PAN and WAN		Group Discussion		https://cse.usf.edu/network/chap1/chap1.html#LocalAreaNetwork	CO4	PPT_6	https://www.youtube.com/watch?v=0LFNN9DgUR8&list=PLM-fa0aUSizLA9oShVBFDgFIFy_VLp&index=21	Questions from Assignment	
10	L8	1	Attenuation, distortion, noise, Signal to Noise Ratio (SNR)	Understand the different barriers to communication like Attenuation, distortion, noise	Service learning	Lecture Through PPT	Practical	https://cse.iitkgp.ac.in/~agupta/networks/2-TransmissionBasics.pdf	CO5	PPT_12	https://www.youtube.com/watch?v=0LFNN9DgUR8&list=PLM-fa0aUSizLA9oShVBFDgFIFy_VLp&index=21	Viva Voce	
11	L9	1	Throughput, propagation speed and time, Wavelength and Shannon Capacity	Differentiate between throughput, propagation speed and time	Service learning	Lecture Through PPT	Practical	https://cse.iitkgp.ac.in/~agupta/networks/2-TransmissionBasics.pdf	CO2	PPT_13	https://www.youtube.com/watch?v=0LFNN9DgUR8&list=PLM-fa0aUSizLA9oShVBFDgFIFy_VLp&index=21	Questions from Assignment	
12	T3	1	Guided and unguided, Attenuation, distortion, noise, throughput, propagation speed and time, wavelength, Shannon Capacity (Tutorial)	Student will understand Basics of Computer Networks		Discussion/ Doubt Clearing session		https://cse.iitkgp.ac.in/~agupta/networks/2-TransmissionBasics.pdf	CO2	PPT_13	https://www.youtube.com/watch?v=0LFNN9DgUR8&list=PLM-fa0aUSizLA9oShVBFDgFIFy_VLp&index=21	Role Play	
13	L10	1	Frequency Division Multiplexing	Understand the working of Frequency Division Multiplexing		Flipped Classroom		https://www.youtube.com/watch?v=y22Q0Z7DWU	CO3	PPT_16	http://www.cs.emory.edu/~cheung/Courses/558/Syllabus/11	Questions from Assignment	
14	L11	1	Wavelength Division Multiplexing	Differentiate the features of WDM and FDM	Demonstration	Flipped Classroom		https://www.youtube.com/watch?v=KdefAYPcH4	CO3	PPT_17	http://www.cs.emory.edu/~cheung/Courses/558/Syllabus/11	Numerical Problem	
15	L12	1	Time Division Multiplexing	Distinguish among TDM, FDM and WDM		Lecture Through PPT	Practical	https://www.youtube.com/watch?v=udU5yk_eHg3c	CO3	PPT_18	http://www.cs.emory.edu/~cheung/Courses/558/Syllabus/11	Numerical Problem	
16	T4	1	Multiplexing, WDM, TDM, FDM (Tutorial of Lecture 10,11 & 12)	Student will understand Basics of Computer Networks		Discussion/ Doubt Clearing session		https://www.youtube.com/watch?v=udU5yk_eHg3c	CO4	PPT_19	http://www.cs.emory.edu/~cheung/Courses/558/Syllabus/11	Role Play	
17	L13	1	Circuit Switching	Understand Circuit Switching	Live project	Lecture Through PPT		https://www.youtube.com/watch?v=udU5yk_eHg3c	CO1, CO3	PPT_20	http://www.cs.emory.edu/~cheung/Courses/558/Syllabus/11	Numerical Problem	
18	L14	2	Packet switching	Compare packet switching with circuit switching	Job shadowing	Lecture Through PPT		https://www.youtube.com/watch?v=udU5yk_eHg3c	CO1	PPT_20	http://www.cs.emory.edu/~cheung/Courses/558/Syllabus/11	Questions from Assignment	
19	L15	2	Message switching	Compare message switching, packet switching and circuit switching	Demonstration	Flipped Classroom		https://www.youtube.com/watch?v=2eFeXAHGjDI	CO2	PPT_21	http://www.cs.emory.edu/~cheung/Courses/558/Syllabus/11	Questions from Assignment	
20	T5	2	circuit switching, packet switching and message switching (Tutorial 13, 14 & 15)	Student will understand Basics of Computer Networks		Discussion/ Doubt Clearing session		https://www.youtube.com/watch?v=2eFeXAHGjDI	CO2	PPT_21	http://www.cs.emory.edu/~cheung/Courses/558/Syllabus/11	Questions from Assignment	

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21	L16	2	Data Link Layer, Types of errors	Understand the functions of data link layer	Demonstration	Lecture Through PPT	Brainstorming	https://www.youtube.com/watch?v=JmV99m5lwK	CO2	PPT_22	http://www.cs.emory.edu/~chenug/Courses/558/Syllabus/11/	Viva Voce
22	L17	2	Framing techniques: Character Stuffing and Byte Stuffing	Implement character count and bit stuffing framing techniques		Flipped Classroom		https://www.youtube.com/watch?v=ahLUWvZP9u0&list=PLM-ifa0aUSizLzA9oShVBFDgFfY_Vlpl&index=16	CO2	PPT_23	https://www.youtube.com/watch?v=JHGkHR_Y5Kc	Numerical Problem
23	L18	2	Error detection methods: Cyclic Redundancy Check and Checksum	Perform error detection using CRC and Checksum techniques		Lecture Through PPT	Practical	https://www.cse.iitb.ac.in/~sri/cs348/cs348-lec8-ErrorDetection-2012.pdf	CO2	PPT_26	https://www.youtube.com/watch?v=JHGkHR_Y5Kc	Viva Voce
24	T6	2	Link Layer and Error Detection Method (Tutorial 16,17 & 18)	Student will understand Basics of Computer Networks		Discussion/ Doubt Clearing session		https://www.cse.iitb.ac.in/~sri/cs348/cs348-lec8-ErrorDetection-2012.pdf	CO2		https://www.youtube.com/watch?v=JHGkHR_Y5Kc	Role Play
25	L19	2	Error detection methods: One bit and two bit parity check	Perform error detection through one bit parity check and two-bit parity check methods		Lecture Through PPT		https://www.youtube.com/watch?v=5pNJKPYeMFO&list=PLM-ifa0aUSizLzA9oShVBFDgFfY_Vlpl&index=4	CO3	PPT_25	https://cse.iitkgp.ac.in/~ksrao/pdf/fi-18/slide-3.pdf	Numerical Problem
26	L20	2	Flow control	Understand the basics of flow control and differentiate between its two types		Lecture Through PPT		https://www.youtube.com/watch?v=Trg27_L525w	CO3	PPT_28	https://cse.iitkgp.ac.in/~ksrao/pdf/fi-18/slide-3.pdf	Viva Voce
27	L21	3	Stop & wait ARQ protocol	Understand the stop & wait ARQ protocol	Demonstration	Lecture Through PPT		https://www.youtube.com/watch?v=JQakTzK9oE4&list=PLM-ifa0aUSizLzA9oShVBFDgFfY_Vlpl&index=5	CO5	PPT_29	https://www.youtube.com/watch?v=5zT-tp9P_I&list=PLM-ifa0aUSizLzA9oShVBFDgFfY_Vlpl&index=6	Role Play
28	T7	3	Error Detection Method, Flow Control, Stop & wait ARQ Protocol (Tutorial 19,10 & 21)	Student will understand Error Detection & ARQ		Discussion/ Doubt Clearing session		https://www.youtube.com/watch?v=JQakTzK9oE4&list=PLM-ifa0aUSizLzA9oShVBFDgFfY_Vlpl&index=5	CO5	PPT_29	https://www.youtube.com/watch?v=5zT-tp9P_I&list=PLM-ifa0aUSizLzA9oShVBFDgFfY_Vlpl&index=6	Viva Voce
29	L22	3	Selective repeat ARQ protocol & Go-Back- N ARQ protocol	Understand selective repeat ARQ protocol & Understand Go-Back- N ARQ protocol		Flipped Classroom		https://www.cse.iitb.ac.in/~sri/cs348/cs348-lec7-SlidingWindow-2012.pdf	CO3	PPT_30	https://www.youtube.com/watch?v=5tAIBZaREk&list=PLM-ifa0aUSizLzA9oShVBFDgFfY_Vlpl&index=31	Role Play
30	L23	3	Network Layer : Internetworking & Devices	Understand the functionality of Network layer in the reference model		Flipped Classroom		https://www.youtube.com/watch?v=0B23AWzafPM&list=PLM-ifa0aUSizLzA9oShVBFDgFfY_Vlpl&index=30	CO1	PPT_33	https://www.youtube.com/watch?v=vjG0vMDbyjQ&list=PLM-ifa0aUSizLzA9oShVBFDgFfY_Vlpl&index=31	Viva Voce
31	L24	3	Repeaters and Hubs	Compare the function of repeaters and hub	Demonstration	Flipped Classroom	Practical	https://www.cse.iitb.ac.in/~sri/cs348/cs348-lec7-SlidingWindow-2012.pdf	CO3	PPT_34	https://www.youtube.com/watch?v=vjG0vMDbyjQ&list=PLM-ifa0aUSizLzA9oShVBFDgFfY_Vlpl&index=31	Role Play
32	T8	3	NARQ & Network Layer (Tutorial 22, 23 & 24)	Student will understand Basics of Computer Networks		Discussion/ Doubt Clearing session		https://www.cse.iitb.ac.in/~sri/cs348/cs348-lec7-SlidingWindow-2012.pdf	CO3	PPT_34	https://www.youtube.com/watch?v=vjG0vMDbyjQ&list=PLM-ifa0aUSizLzA9oShVBFDgFfY_Vlpl&index=31	Question from Mini Project
33	L25	3	Bridges and Switches	Compare the function of bridges and switches	Demonstration	Lecture Through PPT	Practical	https://www.youtube.com/watch?v=teWam9gQlUk	CO3	PPT_35	https://www.youtube.com/watch?v=vjG0vMDbyjQ&list=PLM-ifa0aUSizLzA9oShVBFDgFfY_Vlpl&index=31	Numerical Problem
34	L26	3	Router and Gateway	Understand the functions of router and gateways		Lecture Through PPT		https://www.youtube.com/watch?v=teWam9gQlUk	CO2	PPT_36	https://www.youtube.com/watch?v=vjG0vMDbyjQ&list=PLM-ifa0aUSizLzA9oShVBFDgFfY_Vlpl&index=31	Viva Voce
35	L27	3	Modems	Understand the working of a MODEM	Student teaching	Lecture Through PPT		https://www.youtube.com/watch?v=teWam9gQlUk	CO2	PPT_37	https://www.youtube.com/watch?v=vjG0vMDbyjQ&list=PLM-ifa0aUSizLzA9oShVBFDgFfY_Vlpl&index=31	Role Play
36	T9	3	Network Layer (Tutorial 5,26 & 27)	Student will understand Basics of Computer Networks		Discussion/ Doubt Clearing session		https://www.youtube.com/watch?v=teWam9gQlUk	CO3	PPT_37	https://www.youtube.com/watch?v=vjG0vMDbyjQ&list=PLM-ifa0aUSizLzA9oShVBFDgFfY_Vlpl&index=31	Role Play
37	L28	3	Addressing: IPv4 and IPv6 addressing	Understand Classful addressing		Lecture Through PPT		https://www.youtube.com/watch?v=hjD8Yie2dM&list=PLM-ifa0aUSizLzA9oShVBFDgFfY_Vlpl&index=6	CO2	PPT_38	https://www.youtube.com/watch?v=WaRiLURKAUKs&list=PLQaQKyDAWw889EoDLVoQDw57igGEY2x&index=2&list=160s	Question from Mini Project
38	L29	3	IPv4 subnetting	Implement subnetting for Class A, Class B and Class C		Lecture Through PPT		https://www.youtube.com/watch?v=hjD8Yie2dM&list=PLM-ifa0aUSizLzA9oShVBFDgFfY_Vlpl&index=6	CO2	PPT_39	https://www.youtube.com/watch?v=WaRiLURKAUKs&list=PLQaQKyDAWw889EoDLVoQDw57igGEY2x&index=2&list=160s	Numerical Problem
39	L30	4	IPv4 subnetting		Demonstration	Lecture Through PPT	Brainstorming	https://www.youtube.com/watch?v=hjD8Yie2dM&list=PLM-ifa0aUSizLzA9oShVBFDgFfY_Vlpl&index=6	CO2	PPT_40	https://www.youtube.com/watch?v=WaRiLURKAUKs&list=PLQaQKyDAWw889EoDLVoQDw57igGEY2x&index=2&list=160s	Numerical Problem

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40	T10	4	Addressing & Subnetting (Tutorial 28,29, & 30)	Student will understand addressing & subnetting		Discussion/ Doubt Clearing session		https://www.youtube.com/watch?v=hjD8IYsZdM&list=PLM-faoaUSiwyl2YHYQys4Q2jtwx-&index=6	CO3	PPT_40	https://www.youtube.com/watch?v=WarLURKAUKs&list=PLQgOKyOAIWh889ExOLVQDw57tGGEY2x&index=2&t=160s	Question from Mini Project
41	L31	4	Unicast Routing Protocols	Understand the basics of routing	Student teaching	Lecture Through PPT	Practical	https://www.youtube.com/watch?v=B_gWddnI2GI&list=PLM-faoaUSiwyl2YHYQys4Q2jtwx-&index=52	CO2	PPT_41	https://www.youtube.com/watch?v=WarLURKAUKs&list=PLQgOKyOAIWh889ExOLVQDw57tGGEY2x&index=2&t=160s	Viva Voce
42	L32	4	Routing Information Protocol (RIP)	Understand the working of Routing Information Protocol		Lecture Through PPT	Practical	http://www.youtube.com/watch?v=B_gWddnI2GI&list=PLM-faoaUSiwyl2YHYQys4Q2jtwx-&index=32	CO2	PPT_42	https://www.youtube.com/watch?v=WarLURKAUKs&list=PLQgOKyOAIWh889ExOLVQDw57tGGEY2x&index=2&t=160s	Numerical Problem
43	L33	4	Open Shortest Path First (OSPF)	Explain Open Shortest Path First (OSPF)		Lecture Through PPT	Practical	https://www.youtube.com/watch?v=gkbbIrf7IMg&list=PLM-faoaUSiwyl2YHYQys4Q2jtwx-&index=33	CO2	PPT_43	https://www.youtube.com/watch?v=WarLURKAUKs&list=PLQgOKyOAIWh889ExOLVQDw57tGGEY2x&index=2&t=160s	Numerical Problem
44	T11	4	Routing & its types (Tutorial 31,32 & 33)	Student will understand Routing		Discussion/ Doubt Clearing session		https://www.youtube.com/watch?v=gkbbIrf7IMg&list=PLM-faoaUSiwyl2YHYQys4Q2jtwx-&index=33	CO2	PPT_43	https://www.youtube.com/watch?v=WarLURKAUKs&list=PLQgOKyOAIWh889ExOLVQDw57tGGEY2x&index=2&t=160s	Question from Mini Project
45	L34	4	Border Gateway Protocol (BGP)	Describe Border Gateway Protocol (BGP)	Student teaching	Lecture Through PPT	Practical	https://www.youtube.com/watch?v=gkbbIrf7IMg&list=PLM-faoaUSiwyl2YHYQys4Q2jtwx-&index=33	CO2	PPT_44	https://www.youtube.com/watch?v=WarLURKAUKs&list=PLQgOKyOAIWh889ExOLVQDw57tGGEY2x&index=2&t=160s	Viva Voce
46	L35	4	Static and Dynamic Routing & Routing Basic Commands	Compare Static and Dynamic Routing		Lecture Through PPT	Brainstorming	https://www.youtube.com/watch?v=gkbbIrf7IMg&list=PLM-faoaUSiwyl2YHYQys4Q2jtwx-&index=33	CO2	PPT_45	https://www.youtube.com/watch?v=WarLURKAUKs&list=PLQgOKyOAIWh889ExOLVQDw57tGGEY2x&index=2&t=160s	Numerical Problem
47	L36	4	Distance vector & Link State routing protocol	Understand the features of Distance vector routing protocol		Lecture Through PPT	Practical	https://www.youtube.com/watch?v=qmS1t2wFfI	CO2	PPT_46	https://www.youtube.com/watch?v=c_06mcZ56B&list=PLM-faoaUSiwyl2YHYQys4Q2jtwx-&index=34	Numerical Problem
48	T12	4	outing Commands & Protocol (Tutorial 34,35 & 36)	Student will understand Protocols		Discussion/ Doubt Clearing session		https://www.youtube.com/watch?v=gkbbIrf7IMg&list=PLM-faoaUSiwyl2YHYQys4Q2jtwx-&index=33	CO2	PPT_46	https://www.youtube.com/watch?v=c_06mcZ56B&list=PLM-faoaUSiwyl2YHYQys4Q2jtwx-&index=34	Question from Mini Project
49	L37	4	Transport layer and upper layers in OSI Model	Understand the use of transport layer in the reference model	Demonstration	Lecture Through PPT		https://www.youtube.com/watch?v=sgYp4RWRBv_4&list=PLQgOKyOAIWh889ExOLVQDw57tGGEY2x&index=50	CO5	PPT_49	https://www.youtube.com/watch?v=c_06mcZ56B&list=PLM-faoaUSiwyl2YHYQys4Q2jtwx-&index=34	Viva Voce
50	L38	4	Transport layer functions	Describe various functions of transport layer		Lecture Through PPT		https://www.youtube.com/watch?v=UpEs1P5ueIQ&list=PLM-faoaUSiwyl2YHYQys4Q2jtwx-&index=11	CO5	PPT_50	https://www.youtube.com/watch?v=wQ4_N73duOO	Numerical Problem
51	L39	4	Transmission Control Protocol	Understand the features and format of TCP	Student teaching	Flipped Classroom		https://www.youtube.com/watch?v=UpEs1P5ueIQ&list=PLM-faoaUSiwyl2YHYQys4Q2jtwx-&index=11	CO5	PPT_51	https://www.youtube.com/watch?v=wQ4_N73duOO	Question from Mini Project
52	T13	4	Transport Layer Function & Transmission control protocol (Tutorial 37,38 & 39)	Student will understand TLF & TCP		Discussion/ Doubt Clearing session		https://www.youtube.com/watch?v=UpEs1P5ueIQ&list=PLM-faoaUSiwyl2YHYQys4Q2jtwx-&index=11	CO3	PPT_51	https://www.youtube.com/watch?v=wQ4_N73duOO	Viva Voce
53	L40	4	Connection management	Understand the concept of TCP handshake in connection management	Mini projects	Lecture Through PPT		https://www.youtube.com/watch?v=7-NhvKMrgc&list=PLM-faoaUSiwyl2YHYQys4Q2jtwx-&index=12	CO5	PPT_53	https://www.youtube.com/watch?v=8WQ7zo3KhE&list=PLM-faoaUSiwyl2YHYQys4Q2jtwx-&index=51	Numerical Problem
54	L41	4	Function of Session layer	Understand the functions of session layer	Mini projects	Lecture Through PPT		https://www.youtube.com/watch?v=7-NhvKMrgc&list=PLM-faoaUSiwyl2YHYQys4Q2jtwx-&index=12	CO5	PPT_54	https://www.youtube.com/watch?v=8WQ7zo3KhE&list=PLM-faoaUSiwyl2YHYQys4Q2jtwx-&index=51	Viva Voce
55	L42	4	Presentation layer	Describe functions and responsibilities of presentation layer	Externship	Lecture Through PPT	Practical	https://www.youtube.com/watch?v=7-NhvKMrgc&list=PLM-faoaUSiwyl2YHYQys4Q2jtwx-&index=12	CO3	PPT_55	https://www.youtube.com/watch?v=8WQ7zo3KhE&list=PLM-faoaUSiwyl2YHYQys4Q2jtwx-&index=51	Question from Mini Project
56	T14	4	Connection Management , Session layer & Presentation Layer (Tutorial 37,38 & 39)	Student will understand CM & SLP		Discussion/ Doubt Clearing session		https://www.youtube.com/watch?v=7-NhvKMrgc&list=PLM-faoaUSiwyl2YHYQys4Q2jtwx-&index=12	CO3	PPT_55	https://www.youtube.com/watch?v=8WQ7zo3KhE&list=PLM-faoaUSiwyl2YHYQys4Q2jtwx-&index=51	Viva Voce

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Handwritten signature: Dr. Rajesh Kumar (HOD-BCA)

57	L43	4	Application layer	Understand the functions and responsibilities of application layer	Externship	Lecture Through PPT	https://www.youtube.com/watch?v=sakK1d0LzbyI&list=PLGqOKYdAW889E89EOLV0QDw57tgGEY2x&index=7	COS	PPT_56	https://www.youtube.com/watch?v=y8WQ7z03KhE&list=PLM-faa0U5hwjZ7HYQYvJ4Q2IjtWix&index=51	Numerical Problem
58	L44	4	Domain Name Server	Understand the working of Domain Name Server		Lecture Through PPT	https://www.youtube.com/watch?v=1asG41wCAE&list=PLM-faa0U5hwjZ7HYQYvJ4Q2IjtWix&index=3	COS	PPT_57	https://www.youtube.com/watch?v=1s5dGU-is0c&list=PLM-faa0U5hwjZ7HYQYvJ4Q2IjtWix&index=4	Viva Voce
59	L45	4	Email, HTTP and HTTPS	Understand the basics of email and the difference between HTTP and HTTPS		Lecture Through PPT	https://www.youtube.com/watch?v=cmsE06dr6G4&list=PLM-faa0U5hwjZ7HYQYvJ4Q2IjtWix&index=41	COS	PPT_58	https://www.youtube.com/watch?v=DiOrcmsE06w&list=PLGqOKYdAW889E89EOLV0QDw57tgGEY2x&index=13	Numerical Problem
60	T15	4	Application Layer, Domain Name Server, Email, HTTP & HTTPS (Tutorial 43,44 &45)	Student will understand HTTP & HTTPS		Discussion/ Doubt Clearing session	https://www.youtube.com/watch?v=chICgHdR6G4&list=PLM-faa0U5hwjZ7HYQYvJ4Q2IjtWix&index=41	COS	PPT_58	https://www.youtube.com/watch?v=DiOrcmsE06w&list=PLGqOKYdAW889E89EOLV0QDw57tgGEY2x&index=13	Question from Mini Project

Note : 1 Credit (Theory) =15 Hrs. In a Semester; 1 Credit (Practical) =30 Hrs. In a Semester.

Suggested Readings : (Latest Edition)

TEXTBOOKS:

- TB1. A. S. Tanenbaum, "Computer Networks"; Pearson Education Asia, 4th Ed., 2003.
 TB2. Behrouz A. Forouzan, "Data Communication and Networking", 2nd edition, Tata Mc Graw Hill


REFERENCE BOOKS:

- RB1. D. E. Comer, "Internetworking with TCP/IP", Pearson Education Asia, 2001.
 RB2. William Stallings. "Data and computer communications", Pearson education Asia, 7th Ed., 2002.
 RB3. Leinwand, A., Pinsky, B (2001) Cisco router configuration. United Kingdom: Cisco Press.

JOURNALS

1. IEEE/ACM Transactions on Networking (ToN)
2. Computer Networks (Elsevier)
3. IEEE Transactions on Mobile Computing
4. ACM Computing Surveys (CSUR)
5. IEEE Transactions on Wireless Communications
6. Journal of Computer Networks and Communications
7. International Journal of Network Management
8. Journal of Network and Computer Applications

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