PROGRAMME: BCA (Bachelor of Computer Applications)

SEMESTER – III

Teaching-Learning & Evaluation Plan

Course Information:

Course Code: 23BCA3C02L Course Title: Computer Network lab

Credits Units: 01 Contact Hours: 30 L-T-P: 0-0-2

CA Weightage - 100 Pass Marks (CA) – 40 Special Examination Fees: NA

Course Facilitator :

Dr. Nidhya.M.S Associate Professor School of CS & IT

Dr.Preethi D Assistant Professor School of CS & IT

Dr. Diwakar Assistant Professor School of CS & IT

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Mrs. Prathima Assistant Professor School of CS & IT

Dr.Sambath Kumar S Assistant Professor School of CS & IT

Dr.Boopathi Raja Assistant Professor School of CS & IT

Programme Outcomes (POs)

At the end of the programme, students will be able to	
PO 1	**Computational Knowledge:** Understand and apply mathematical foundation, computing and domain knowledge for the conceptualization of computing models from defined problems.
PO 2	**Problem Analysis:** Ability to identify, critically analyze and formulate complex computing problems using fundamentals of computer science and application domains.
PO 3	**Design / Development of Solutions:** Ability to transform complex business scenarios and contemporary issues into problems, investigate, understand and propose integrated solutions using emerging technologies.
PO 4	**Conduct Investigations of Complex Computing Problems:** Ability to devise and conduct experiments, interpret data and provide well informed conclusions.
PO 5	**Modern Tool Usage:** Ability to select modern computing tools, skills and techniques necessary for innovative software solutions.
PO 6	**Professional Ethics:** Ability to apply and commit professional ethics and cyber regulations in a global economic environment.
PO 7	**Life-long Learning:** Recognize the need for and develop the ability to engage in

	continuous learning as a Computing professional.
PO 8	**Project Management:** Ability to understand management and computing principles with computing knowledge to manage projects in multidisciplinary environments.
PO 9	**Communication Efficacy:** Communicate effectively with the computing community as well as society by being able to comprehend effective documentations and presentations.
PO 10	**Societal & Environmental Concern:** Ability to recognize economic, environmental, social, health, legal, ethical issues involved in the use of computer technology and other consequential responsibilities relevant to professional practice.
PO11	**Individual & Team Work:** Ability to work as a member or leader in diverse teams in multidisciplinary environment.
PO12	**Innovation and Entrepreneurship**: Identify opportunities, entrepreneurship vision and use of innovative ideas to create value and wealth for the betterment of the individual and society.

Programme Specific Outcomes (PSOs)

PSO 01	To Study the basic taxonomy and terminology of the computer networking and enumerate the layers of OSI model and TCP/IP model.
PSO 02	To Gain the knowledge of basic network devices, Wireless Technology and wireless networking components
PSO 03	To Acquire the knowledge of Network Layer routing protocols and Application Layer
PSO 04	To Learn the WAN Technology and Network Operating Systems as well as basic trouble shooting network

Course Outcomes:

At the end of the course, students will be able to

Course Outcome	Description	Bloom's Taxonomy Level
CO1	Describe the basics of data communication, networking, internet and their importance	**L2**
CO2	Explain the concepts of layered architecture, protocols and interworking in computer networks	**L2**
CO3	Examine the various networks using the logical addressing by applying subnetting and routing concepts	**L4**
CO4	Demonstrate the working of transport and application	**L3**

	layer protocols in an IP based networking infrastructure.	
CO5	Assess application layer services, client-server model, HTTP, email, WWW, TELNET.	**L5**

CO-PO/PSO Mapping: (3-Strong Correlation 2- Medium Correlation 1- Low Correlation)

Course Outcome	Bloom's Taxonomy Level	Program Outcomes(PO)												Program Specific Outcomes(PSO)		
		PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12	PSO1	PSO2	PSO3
CO1	L2	3	1	1	1	1	1	-	-	-	-	-	-	1	2	2
CO2	L3	2	2	2	1	1	2	-	-	-	-	-	-	1	2	2
CO3	L4	2	2	2	1	2	2	2	1	2	1	1	1	1	1	2
CO4	L5	3	3	3	2	3	2	3	1	2	1	2	2	3	2	2
CO5	L5	3	3	2	2	2	2	2	1	2	1	2	2	3	2	2
CO Avg.		2.6	2.2	2	1.4	1.8	1.8	2.3	1	2	1	1.6	1.6	1.8	1.8	2

Practical No	Broad topic	Subtopic	Learning Outcomes
Practical 1	**Networking basics**	**demonstration of packet tracer installation and packet tracer interface**	**Learn to install packet tracer and get knowledge about its interface**
Practical 2	**Networking basics**	**design a peer-to-peer network using the packet tracer, check the connectivity using ping command, sending PDU in real time mode and simulation mode**	**Peer to Peer network design and methods to check the connectivity between the devices**
Practical 3	**Networking basics**	**design two isolated networks in packet tracer to demonstrate the difference in working of hub and switch**	**Learn the difference between the working of hub and switch** **LAB EVALUATION 1**
Practical 4	**Networking basics**	**design a network with hybrid topology that includes a bus backbone and three star networks, check the connectivity using ping command, sending PDU in real time mode and simulation mode**	**Learn to design topology for a network**
Practical 5			**Learn to**

	Connectivity between networks and routing	**connect two networks using a single router and configure the router for communication between the two networks**	**connect two networks using router**
Practical 6	**Connectivity between networks and routing**	**connect two or more networks with a router in each network and configure the routers for static routing**	**Learn to create static routing between two different networks** **LAB EVALUATION 2**
Practical 7	**Connectivity between networks and routing**	**connect two or more networks with a router in each network and configure the routers for dynamic routing using RIP**	**Learn to create dynamic routing between two different networks**
Practical 8	**Connectivity between networks and routing**	**use static routing to connect the subnets of a network assigned with the following network 197.34.21.0/24, use FLSM to divide the network into subnet where every subnet supports at least 56 hosts**	**Learn to connect subnets of a network**
Practical 9	**Configuring network services**	**configure HTTP server and demonstrate the process to access a website using IP address in real time and simulation mode**	**Learn to configure HTTP service of Application layer LAB EVALUATION 3**
Practical 10	**Configuring network services**	**configure DNS server for two domain names with two HTTP servers in the networks and demonstrate the process to access both the servers using name resolution in real time and simulation mode**	**Learn to configure DNS service of Application layer**
Practical 11	**Configuring network services**	**configure DHCP server and demonstrate how DHCP server assigns dynamic IP addresses to the nodes in local network**	**Learn to configure DHCP service of Application layer**
Practical 12	**Configuring network services**	**configure the FTP server and demonstrate the working of FTP in real time and simulation mode**	**Learn to configure FTP service of Application layer**

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Bloom's Taxonomy-Revised

LEVEL	DESCRIPTION	MEANING	ACTION VERBS
6	Creating	Can the student create a new product or POV?	Assemble, construct, create, change, combine, compose, design, develop, formulate, invent, modify, organize, propose, theorize, write
5	Evaluating	Can the student justify a stand or decision?	Appraise, agree, assess, argue, conclude, decide, defend, judge, prioritize, prove, rate, recommend, select, support, value
4	Analyzing	Can the student distinguish between different parts?	Contrast, compare, criticize, differentiate, discriminate, dissect, distinguish, examine, experiment, operate, question, simplify, test
3	Applying	Can the student use information in a new way?	Choose, demonstrate, dramatize, employ, illustrate, interpret, schedule, sketch, solve, use
2	Understanding	Can the student explain ideas and concepts?	Classify, describe, discuss, explain, identify, infer, locate, outline paraphrase, recognize, report, summarize, select, translate
1	Remembering	Can the student recall or remember information?	Define, duplicate, find, list, label, match, memorize, name, omit, recall, repeat, state, spell, tell

Signature of the Faculty **Signature of the HoD**