



# Indraprastha College for Women

## University of Delhi

Course Name:	B.Sc. (Hons.) Computer Science
Paper Title:	Unix Network Programming
Unique Paper Code:	2343010011
Semester:	Vth
Faculty(s):	Ms. Nisha
Year:	2025-2026

<b>Work Plan</b>			
Period	Unit No.	Learning Objective	Topics to be Covered
1 <sup>st</sup> Aug -3 <sup>rd</sup> Aug	1	Introduction Basics of Client Server applications	Example of day time client server, concurrent servers
5 <sup>th</sup> Aug-10 <sup>th</sup> Aug	1	Introduction Basics of Client Server applications	protocols, sockets, port numbers.
12 <sup>th</sup> Aug-17 <sup>th</sup> Aug	2	Connection-oriented Socket Applications	Elementary TCP sockets – Socket, connect, bind,
19 <sup>th</sup> Aug-24 <sup>th</sup> Aug	2	Connection-oriented Socket Applications	listen, accept, fork and exec function, close function,
26 <sup>th</sup> Aug-31 <sup>st</sup> Aug	2	Connection-oriented Socket Applications	Socket Address Structures, Byte Ordering and Manipulation Functions, TCP Client and Server for Echo,
2 <sup>nd</sup> Sep-7 <sup>th</sup> Sep	2	Connection-oriented Socket Applications	Signal Handling in case of crashing and rebooting of server, Shutdown process function.
9 <sup>th</sup> Sep-14 <sup>th</sup> Sep	2	Connection-oriented Socket Applications	Socket Options: Getsockopt and stockpot functions
16 <sup>th</sup> Sep-21 <sup>st</sup> Sep	2	Connection-oriented Socket Applications	Socket Options: Socket states, Generic socket option.
23 <sup>rd</sup> Sep-28 <sup>th</sup> Sep	3	Connectionless Socket Applications	TCP-oriented basic concurrent client server applications,
30 <sup>th</sup> Sep-5 <sup>th</sup> Oct	3	Connectionless Socket Applications	UDP oriented Echo client and server application,
7 <sup>th</sup> Oct-12 <sup>th</sup> Oct	3	Connectionless Socket Applications	Handling of errors like lost datagram,
14 <sup>th</sup> Oct-19 <sup>th</sup> Oct	3	Connectionless Socket Applications	Lack of flow control with UDP,
21 <sup>st</sup> Oct-26 <sup>th</sup> Oct	3	Connectionless Socket Applications	determining outgoing interface with UDP.
28 <sup>th</sup> Oct-2 <sup>nd</sup> Nov			MID SEMESTER BREAK
4 <sup>th</sup> Nov-9 <sup>th</sup> Nov	4	Elementary name and Address conversions	Domain Name System, socket functions

11 <sup>th</sup> Nov-16 <sup>th</sup> Nov	4	Elementary name and Address conversions	socket functions like gethostbyname, gethostbyname2,
18 <sup>th</sup> Nov-23 <sup>rd</sup> Nov	4	Elementary name and Address conversions	gethostbyaddr function, uname function, gethostname function,
25 <sup>th</sup> Nov-27 <sup>th</sup> Nov	4	Elementary name and Address conversions	getservbyname and getservbyport functions.
28 <sup>th</sup> Nov	DISPERSAL OF CLASSES		

Unit	TOPICS
I	Introduction Basics of Client Server applications, Example of day time client server, concurrent servers, protocols, sockets, port numbers.
II	Connection-oriented Socket Applications: Elementary TCP sockets – Socket, connect, bind, listen, accept, fork and exec function, close function, Socket Address Structures, Byte Ordering and Manipulation Functions, TCP Client and Server for Echo, Signal Handling in case of crashing and rebooting of server, Shutdown process function. Socket Options: Getsockopt and stockpot functions, Socket states, Generic socket option.
III	Connectionless Socket Applications: TCP-oriented basic concurrent client server applications, UDP oriented Echo client and server application, Handling of errors like lost datagram, Lack of flow control with UDP, determining outgoing interface with UDP.
IV	Elementary name and Address conversions: Domain Name System, socket functions like gethostbyname, gethostbyname2, gethostbyaddr function, uname function, gethostname function, getservbyname and getservbyport functions.
S. No.	Name of Authors/Books/Publishers
1.	W. Richard Stevens, Bill Fenner, Andrew M. Rudoff, Unix Network Programming, The sockets Networking API, Vol. 1, 3rd Edition, PHI.
2.	B. A. Forouzan: Data Communications and Networking, THM Publishing Company Ltd
3.	R. Stevens, Unix Network Programming, PHI 2nd Edition