

Course Type	Course Code	Name of Course	L	T	P	Credit
DP	NCSC506	Advanced Computer Networks Lab	0	0	3	1.5

Course Objective

This syllabus is designed in such a manner that it will provide the basic and fundamental practical knowledge on Advanced Computer Networks. The proposed syllabus is designed to cover Computer Networks to provide better research and industry oriented understanding for PG students.

Learning Outcomes

On successful completion of this unit, students will be able to:

- Identify the basic concept and understand the state-of-the-art in protocols, architectures and applications of computer networks.
- Compare, contrast and analyse networks.
- Understand how networking research is done.
- Understand how we can apply networking tools for various requirements.

Unit No.	Topics to be Covered	Practical Hours	Learning Outcome
1	Network Programming	12	The student will get the complete idea of understanding socket and using TCP & UDP Sockets for the client server programing.
2	NS-3 Programming	12	Know about the process of installing NS-3 simulator, creating scenarios and configuring the same as per the planned network environment, analysing the trace files, viewing the operation on network animator and visualizing the performance on exporting the data to GNUPLOT. Know about building various kind of network topologies along with different network protocols (wired and wireless) using NS-3.
3	Cisco Packet Tracer	9	The students will get a chance to do hands-on session on Cisco Packet Tracer, which is a powerful network simulation and visualization tool by Cisco to practice networking, IoT, and cybersecurity skills. Understand various CLI commands to get the work done.
4	Different Networking tools like Wireshark, Filezilla, TCPdump etc.	9	The students can understand the role of the “computer networking tools” which is a type of software that help in the design, creation, monitoring, maintenance, and troubleshooting of networks. Hands-on with some of the Network tools like tcpdump, Wireshark and Filezilla.
Total		42	

Text Books:

1. W. R. Stevens et al, “UNIX Network Programming - The Sockets Networking API”, Addison Wesley, 3rd Edition.