



SKILL LAB

ON

Network Simulation Tools For 7th Semester Students



KLS GOGTE INSTITUTE OF TECHNOLOGY, BELAGAVI

Department of Computer Science & Engineering

Overview:

The primary purpose of the Network Simulation Tools Skill Lab is to bridge the gap between theoretical knowledge and practical application in the field of networking. As technology continues to evolve, the students must acquire the skills necessary to design, implement, and troubleshoot complex network systems. This skill lab serves several key purposes like Understanding Networking Fundamentals, Hands-On Experience with Simulation Tools, Real-World Application and Problem Solving, Collaboration and Teamwork, Preparation for Future Careers, and Enhancing Analytical and Critical Thinking Skills. The Network Simulation Tools Skill Lab is designed not just as a learning experience, but as a comprehensive program that prepares engineering students for the complexities of modern networking. The lab aims to equip students with the skills and confidence necessary to succeed in their future careers in technology and engineering.



Mode of Conduction of each Module: Offline

Theory: 10 Hours,
Demo: 10 Hours,
Lab Sessions: 16 Hours
Total duration: 36 Hours
Certification exam: 03 Hours

Module 1: Introduction to Networking and Simulation Concepts:

Fundamentals of Networking, Importance of Network Simulation, Setting Up the Simulation Environment.

Module 2: Cisco Packet Tracer and Introduction to GNS3

Creating Basic Network Topologies, Configuring Devices, Simulating Network Behavior, Advanced Configuration Techniques, Introduction to GNS3.



Module 3: Advanced GNS3 & Introduction to NS3

Configuring Real IOS Images, Dynamic Routing Protocols, Overview of Network Simulator 3, Creating Basic Simulations Analyzing Simulation Results.

Module 4: Advanced NS3 and OMNeT++

Advanced Features in NS3, Introduction to OMNeT++.

Terms and Conditions

Students who have paid a skill lab fee to the institution are eligible for training. The students must maintain 90% attendance for obtaining the skill lab certificate. Students must attend training as per scheduled time.

Acceptance

In order to accept and start the training program, students are required to register with the respective department. Details to be provided by the student to the department include:
Name, USN, UID, Mobile No, Email id

Coordinators:

Name: Dr. Prasad M. Pujar
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Outcomes

- Proficiency in Networking Concepts.
- Hands-On Experience with Simulation Tools.
- Enhanced Troubleshooting and Analytical Skills.