Network Management and Security

June 21 to June 26, 2021
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Computer networks are built to support business functionality and beyond communication the result of business is data. The data needs organization, maintenance and above all protection from malicious attackers. We live in a digital world, where an increasing amount of our day-to-day activities have migrated online. Cyber-criminals can effortlessly wreak havoc on our lives and businesses. Our increased use of the internet and mobile usage gives them even more opportunities to exploit our vulnerabilities. That's where networking and security awareness comes in! To address this need, this course is designed to educate our students on the different security risks and threats out there, as well as potential weak spots. Students must learn the best practices and procedures for keeping networks and data secure.

About Instructors:

This course will be taught by the Internal faculty of SIES GST and the Industry experts from Networking and Security Domain.

Industry Experts from Networking and Security Domain:

1. Dr. Dipanjan Biswas- Certified Trainer (CCNA, CCNP and CCIE), NOKIA, WAN Optimization and Design Architect.
2. Mr. Sandesh Gupta- Forensic Consultant, Lab Systems Pvt Ltd.

Internal Expert:

Dr. K. Lakshmi Sudha, Associate Professor

Course Objectives:

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To learn the fundamental aspects of security in a modern networked environment with the focus on system design aspects in the specific context of network / internetwork security.
To learn the effective assessment methodologies in Digital Forensics.

Course Outcomes:
- Students will be able to design a secured Enterprise Network.

● Students will be able to develop effective assessment methodologies in Digital Forensics.

Course Content:

Prerequisite: Computer Networks, Basics of security.

Module	Contents	External Expert/ Internal Faculty Member	Hours
1.	**Fundamentals of Networking and design** Introduction, IP addressing (IPV4 and IPV6) Understanding, configure Router and Switch, Module, Implementation of DHCP, ACL, NAT, PAT etc, Password Recovery, Backup of running config to startup config, Trunking, VLAN, OSPF, EIGRP protocols etc, Design of Wireless Network.	Dr. K. Lakshmi Sudha	20 hrs
2.	**Security fundamentals, VPNs, Wireless security protocols** Key security concepts, Security program elements, Configure device access control using local passwords, Describe security password policies elements, such as management, complexity, and password alternatives, Remote access and site-to-site VPNs, Configure and verify access control lists, Configure Layer 8 security features, Differentiate authentication, authorization, and accounting concepts, Describe wireless security protocols, Configure WLAN using WPA8 PSK using the GUI.	Dr. Dipanjan Biswas- Certified Trainer (CCNA, CCNP and CCIE)	10 hrs
3.	**Digital forensics** Introduction to Digital Forensics and Digital Evidences, Forensic Duplication and Disk Analysis, and Investigation, Network Forensics, Forensic Investigation, Report and Forensic Tools.	Mr. Sandesh Gupta - Forensic Consultant, Lab Systems Pvt. Ltd.	5 hrs
4.	Problem statement formulation for Mini project and its implementation based on the concepts learned.	Dr.K.Lakshmi sudha	05 hrs

Assessment:

1. Module wise assignments and quizzes should be completed by students.
2. Mini project should be completed.

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