



**GURU NANAK INSTITUTIONS TECHNICAL CAMPUS
(AUTONOMOUS)**

B.Tech. (Minor in Cyber Security)

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FOUNDATIONS OF CYBER SECURITY (18MD0CS13)

COURSE OBJECTIVE:

This course is introduced to familiarize the need for cyber security, various threats, counter measures and cyber laws.

SYLLABUS:

UNIT-I

Introduction: Sputnik and ARPANET, The 1980s: PCs, Floppy Disks, and Spies, Hackers: Kevin Mitnick and the 414s, Poindexter's Bold Move, the Morris Worm, Cyber security Fundamentals. Risk management for cyber security: Overview of Risk Management, Introduction, Risk Management Frameworks, The Process of Risk Management, Risk Framing, Risk Assessment and the Risk Formula, Threat Assessment, Vulnerability Assessment, Consequence Assessment, Risk Determination, Risk Response, Risk Monitoring.

UNIT-II

Cyber security law and policy: Overview of Cyber security Law and Policy, Introduction, The Genesis of Cyber security Law and Policy (1945-1984, The Cyber security Control Conflict (1984-1995) The Development of Cyber security Law and Policy (1995-2001, Cybersecurity and Homeland Security (2001-2008), CNCI and the Age of Cyber Warfare (2008 – Present), Recent Developments in Cyber security Law and Policy.

UNIT-III

Fundamentals of management for cyber security: Introduction: Organizations, Missions, Managers, and Capabilities, Managerial Fundamentals, Managerial Challenges for Cyber security: Introduction and Case Study, The Cyber security Management Framework, Management and Acquisition Measuring Progress against Projections: Earned Value Management, Compliance and reporting.

UNIT-IV

Computer science fundamentals and cyber security operations: Overview of Computer Science Fundamentals, and Cyber security Operations, Technical Fundamentals, An Introduction to the Internet, Crypto logic Methods for Internet Security, Attacks, Exploits, and Vulnerabilities, Cyber security Operations.

UNIT-V

Cyber security for the private sector: Overview of Cyber security in the Private Sector, Introduction, The Structure and Legal Obligations of Private-Sector Companies, Cyber security Law and the Private Sector, The Model Corporate Cyber security Program, Internal Controls and Audits.

TEXT BOOK:

1. Lee M. Zeichner, “Cyber Security Foundations”, First Edition.

REFERENCE BOOK:

1. “Cyber Security Essentials”, James Graham Richard Howard Ryan Olson, Taylor and Francis Group, LLC Auerbach Publications is an imprint of Taylor & Francis Group, an Informa business, 2011.

COURSE OUTCOMES:

Upon completion of this course, students should be able to:

CO1: learn the basics of networks and its risk management

CO2: realize various cyber security law and policy

CO3: discuss fundamentals of management for cyber security

CO4: describe cyber security operations

CO5: identify cyber security for the private sector

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