Abstract

Cyber-attacks are easier due to high Internet penetration and poor awareness about Cyber Security. A recent cyber awareness survey indicates that many users of digital devices have little knowledge about the fundamentals of Cyber Security. Hence, data stored on digital devices are more susceptible to cyber-attacks. This course helps students understand the fundamentals of Cyber Security and makes their surfing and digital transactions safe over the Internet.

Methodology

The course will be conducted through activity based learning, classroom discussion and demonstration of security tools, case study/scenario based learning, project based learning and laboratory practices.

Academic Concept

Students will learn the following academic concepts during the course:
- Fundamentals of Cyber Security
- Aspects of Information security over Internet
- Cyber-attacks and its prevention mechanisms
- Aspects of safe financial transactions over Internet
- E-commerce Security
- Security Management Practices
- Digital Forensics and Intellectual Property Rights in Cyberspace

Learning Outcome

After completing this course, students will have gained an awareness of key Cyber security principles. The students will be able to describe and classify various categories of cyber-attacks, understand how malicious code (virus, ransomware, etc.) works, apply prevention mechanisms to protect digital resources and personal data stored on devices and perform safe financial transactions over Internet with greater security.

Tangible Outcome

- Students will exhibit posters with live demonstration related to: E-mail forensics - detecting location of email sender; Detecting fake websites; Data Security using Cryptography Image forensics (detecting forged images); Steganography (Hiding data into image)
- Students will exhibit posters related to: Cyber-attacks and their prevention mechanisms; Safe financial transactions over Internet; Securing personal data on digital devices; E-commerce Security and Computer / Mobile Forensics

Recommended for

Students keen on learning about cyber-security and its solution

Instructor

Kuntal Patel is an Assistant Professor at School of Engineering and Applied Science, Ahmedabad University. He is a certified Cyber Security Professional. He has published more than 25 research papers at peer-reviewed Journals and Conferences.