Syllabus for B.Tech (CSE) IV YEAR II SEM
Computer Science and Engineering
CYBER SECURITY AND CYBER LAWS

Code: 9FC07
Prerequisite: Intellectual Property Rights, Cryptography

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2	0	0	2

Course Objective:
Illustrate cybercrime violations and penalties, and to interpret security policies and laws associated with it.

Course Outcomes:
After completion of this course student will be able to:
1. Summarize the cryptographic procedures and understand its primitives. [L2]-U1
2. Outline Security policy in Legislation and Comprehend E-Commerce frame work, models and its associated threats.[L4]-U2
3. Demonstrate the role of electronic signatures in E-Commerce and summarize the various Laws relating to it.[L2,L3]-U3
4. Categorize international cyber laws and cybercrimes and explore Penalties, Compensation and Adjunction of violations of provisions of IT Act 2000.[L4]-U4,U5
5. Classify and outline the offences under the Cyberspace law and the Internet in India.[L2]-U6

UNIT-I

Introduction to cyber Security, cryptography, Types of Attacks, Secret Key Cryptography

Introduction: Cyber attacks, Defence Strategies and Techniques Mathematical background for Cryptography: Modulo arithmetic, The greatest common divisor, Useful Algebraic Structures, Chinese Remainder Theorem Basics of Cryptography: Secret versus Public key Cryptography, Types of attacks, Elementary substitution Ciphers, Elementary Transposition Ciphers, Other Cipher Properties Secrete Key Cryptography: Product Ciphers, DES Construction, Modes of Operation, MAC and other Applications, Attacks, Linear Crypt analysis.

UNIT-II

Introduction to Computer Security, Internet, E-commerce and E-governance with reference to Free Market Economy

Definition, Threats to security, Government requirements, Information Protection and Access Controls, Computer security efforts, Standards, Computer Security mandates and legislation, Privacy considerations, International security activity, Conceptual Framework of E-commerce: governance, the role of Electronic Signatures in E-commerce with Reference to Free Market Economy in India.

UNIT-III

Law relating to electronic records and intellectual property rights in India

Legal aspects of Electronic records / Digital signatures, Cyber laws, the roles and regulations of Certifying Authorities in India, Protection of Intellectual Property Rights in Cyberspace in India.

UNIT-IV

International Efforts relating to Cyberspace laws and Cyber crimes

International efforts related to Cyber laws, Council of Europe (COE) convention on Cyber Crimes.

UNIT-V

Penalties, Compensation

Penalties, Compensation and Adjunction of violations of provisions of IT Act 2000 and judicial review.

UNIT-VI

Offences under the Cyberspace, Internet in India and Miscellaneous provisions of IT Act and Conclusions

Some important offences under the Cyberspace law and the Internet in India, Other offences under the Information Technology Act in India, The role of Electronic Evidence and miscellaneous provisions of the IT Act.

TEXT BOOKS:

1. Network security and Cryptography by Bernard Menezes CENGAGE Learning Publications, 2010.
2. Cyber Laws and IT Protection, Harish Chander, PHI, 2012.

REFERENCES:

1. Debby Russell and Sr. G.T Gangemi, "Computer Security Basics (Paperback)", 2ndEdition, O' Reilly Media, 2006.
2. Wenbo Mao, "Modern Cryptography – Theory and Practice", Pearson Education, New Delhi, 2006.
3. Cyberspace and Cybersecurity, George Kostopoulos, Auerbach Publications, 2012.
4. Cyber Forensics: A Field Manual for Collecting, Examining, and Preserving Evidence of Computer Crimes, Second Edition, Albert Marcella, Jr., Doug Menendez, Auerbach Publications, 2007