FACULTY OF COMPUTER APPLICATIONS

MASTER OF SCIENCE – CYBER SECURITY AND CYBER LAW

- **Sem.** : 1
- **Subject Code** : 05CS3102
- **Subject** : Cyber Law and Security Compliance
- **Course Objectives**: After completing this course, students will be able to:
  1. Understand the fundamentals of cyber law, governance principles, and legal frameworks at national and global levels.
  2. Analyze information security governance models and security architectures such as SABSA, COBIT, and CMM.
  3. Apply risk management techniques and frameworks (e.g., NIST RMF, Zero Trust) to identify and mitigate cyber risks.
  4. Develop awareness and implementation strategies for security governance, operational security, and human risk management.
  5. Evaluate cyber laws, ethical issues, and global compliance requirements including GDPR, DPDP Act, and AI regulations.

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- **Prerequisites**: Basics of cyber awareness and real-life cyber crime

Unit No	Topics Covered	No of lectures required
1	**Introduction to Cyber Law, Governance & Foundations** ● Introduction to Cyber Law ● Need for Cyber Laws (Indian & Global Context) ● The Indian IT Act & Amendments ● Cybercrime landscape & legal challenges in India ● Consequences of weak cyber laws **Governance Fundamentals** ● Definition & history of governance ● Types of governance ● Security governance principles ● Six outcomes of security governance ● Benefits of governance **IT Governance** ● IT Governance concepts ● Alignment of security with business objectives ● IT governance & risk management ● Governance guidelines ● Legal compliance lifecycle (audit → enforcement)	12

2	**Information Security Governance and Security Architecture:** ● Information Security as a multi-dimensional discipline ● Dimensions of Information Security ● Information Security Governance ● Relationship with Corporate Governance ● Governance models ● Introduction to Privacy Enhancing Technologies (PETs) **Security Architecture** ● Security Architecture concepts ● SABSA framework ● COBIT framework ● PRISMA Framework ● Capability Maturity Model (CMM) ● PCI-DSS (Payment Card Industry Data Security Standard)	**12**
3	**Risk Management and Frameworks:** ● Risk management objectives & responsibilities ● Risk assessment process ● IT risk across management levels ● Recovery Time Objectives (RTO) ● Recovery Point Objective (RPO) guidelines ● NIST Risk Management Framework (RMF) ● Zero Trust Architecture (ZTA) ● Supply chain risk & third-party risk basics ● Integration of AI in risk management frameworks (predictive analysis, automated risk scoring)	**12**

4	**Security Awareness, Implementation and Operational Security:** ● Security training & awareness ● Target audiences ● Conscious competence learning model ● Awareness methodologies **Governance Implementation** ● Steps for establishing Information Security Governance environment ● Management components of information protection ● Security culture & human risk management ● Phishing awareness & simulation concepts ● Insider threat awareness ● Security awareness metrics **Operational Security** ● Introduction to SOC (Security Operations Center) ● Incident response lifecycle ● Basics of SIEM & monitoring ● Role of CERT-In in incident response and reporting	**12**

5	**Cyber Law, Ethics & Global Compliance:** ● Cyber Law, Ethics & Global Compliance ● GDPR ● CCPA ● DPDP Act (India) ● HIPAA ● EU AI Act ● AI Government Guidelines for Data Protection Impact Assessment (DPIA) **Privacy Engineering & Data Governance** ● Privacy-by-design principles ● Data lifecycle from legal perspective ● Data minimization & purpose limitation ● Cross-border data transfer regulations ● Advanced data protection principles (aligned with GDPR & DPDP) **Regulatory Compliance & Legal Obligations** ● Incident reporting obligations (legal timelines) ● Regulatory bodies & enforcement ● Role of NCIIPC in compliance **Emerging Legal & Ethical Challenges** ● AI regulation & accountability ● Ethical issues in automated decision-making ● Legal risks in AI systems ● Future of cyber law & global compliance ● Legal and ethical implications of AI-driven systems	**12**

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- **Course Outcomes :**At the end of the course, students will be able to:
  1. Explain key concepts of cyber law, IT governance, and legal compliance frameworks in cybersecurity.
  2. Analyze and compare different information security governance models and architectural frameworks.
  3. Assess cybersecurity risks and apply appropriate risk management frameworks for organizational security.
  4. Design and implement security awareness programs and operational security mechanisms including incident response.
  5. Evaluate legal, ethical, and regulatory challenges in cybersecurity, including data privacy and emerging technologies like AI.

Text Book:

1. Cyber Security Understanding Cyber Crimes, Computer Forensics and Legal Perspectives by Nina Godbole and Sunit Belpure, Publication Wiley
2. Information Security governance by S.H.VON Solms and R. VON Solms, Springer
3. Information Security Governance a practical development and implementation approach by Kirag Brotby, WILEY.
4. Calo, R., Froomkin, A. M., & Kerr, I. (Eds.). (2020). The Cambridge Handbook of the Law, Ethics and Policy of Artificial Intelligence. Cambridge University Press.

Reference Books:

1. Data Privacy and GDPR Handbook, Sanjay Sharma, 2019.
2. Security Studies and Introduction by Paul D. Williams, Routledge
3. Building a HIPAA-Compliant Cybersecurity Program, Eric C. Thompson, APress, 2017.
4. Information Security Policy Development for Compliance, Barry L. Williams, CRC Press, 2013.
5. Data Privacy and GDPR Handbook, Sanjay Sharma, 2019.
6. The Challenges of Artificial Intelligence for Law in Europe, Marton Varju Kitti Mezei.

Web References :

1. https://www.ibm.com/security/services/security-governance
2. https://www.meity.gov.in/static/uploads/2024/06/2bf1f0e9f04e6fb4f8fef35e82c42aa5.pdf
3. https://infosecawareness.in/cyber-laws-of-india
4. https://cert-in.org.in/

Syllabus Coverage from text /reference book & web/app reference:

Unit #	Chapter Numbers
1	Book 1 Chapter 6 Book 3 Chapter 1 Book 2 Chapter 2
2	Book 2 Chapter 2 and 3
3	Book 3 Chapter 6 and 7
4	Book 2 Chapter 10 and 11
5	Book 4 Chapter 3, 5 and 7