

NIRMA UNIVERSITY

Institute:	Institute of Technology
Name of Programme:	Integrated B.Tech.(CSE)-MBA
Course Code:	CSI0906
Course Title:	Data Privacy
Course Type:	(<input type="checkbox"/> Core/ <input type="checkbox"/> Value Added Course / <input checked="" type="checkbox"/> Department Elective / <input type="checkbox"/> Institute Elective/ <input type="checkbox"/> University Elective/ <input type="checkbox"/> Open Elective / <input type="checkbox"/> Any other)
Year of Introduction:	2022-23

L	T	Practical Component				C
		LPW	PW	W	S	
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Course Learning Outcomes (CLOs):

At the end of the course, the student will be able to –

1. summarize the concepts of web security and privacy, hardware and software vulnerabilities and protection mechanisms (BL2)
2. develop the protection mechanisms against several data related attacks (BL3)
3. analyze the performance of various tools for data privacy (BL4)
4. appraise the need for data privacy and the related technologies (BL5)

Syllabus:

Total Teaching hours: 30

Unit	Syllabus	Teaching hours
Unit-I	Introduction to Security: Cryptography, Symmetric Cipher, Substitute Techniques, Transposition Techniques; Web security, Hardware and software vulnerabilities	06
Unit-II	Data Privacy: Data localization issues, managing personally identifiable or sensitive information, Hippocratic databases, Differential privacy, Privacy preserving data analysis	07
Unit-III	Frameworks of Data Privacy Law: Privacy in the Media, Surveillance, Data, Around the world; Data protection in healthcare; Privacy and Information law, Models of protection	07
Unit-IV	Data Explosion: Availability vs. Storage vs. Collection trade-off, barriers to distribution, mathematical models for sharing practices and policies for computing privacy and risk measurements	07
Unit-V	Demographics and Uniqueness, data linking, data profiling, data privacy attacks.	03

Self-Study: The self-study contents will be declared at the commencement of semester. Around 10% of the questions will be asked from self-study contents

- Suggested Readings/References:
1. Stallings, W. Cryptography and Network Security, Pearson Education India
 2. Giannotti, F., and Pedreschi, D. (Eds.). Mobility, data mining and privacy: Geographic knowledge discovery, Springer Science & Business Media.
 3. Bygrave, L. A. Data privacy law: an international perspective (Vol. 63), Oxford: Oxford University Press.
 4. Scoble, R., Israel, S., and Benioff, M. R. Age of context: Mobile, sensors, data and the future of privacy, USA: Patrick Brewster Press.
 5. Bendat, J. S., and Piersol, A. G. Random data: analysis and measurement procedures, Wiley

Suggested List of Experiments:	Sr. No.	Title	Hours
	1	Installation of Openssl and study of Openssl	02
	2	Encryption/decryption of symmetric and asymmetric algorithms using openssl, hash algorithms for the openssl.	04
	3	Implementation of Substitution and Transposition cipher.	02
	4	Installation of Kali Linux using VMware and installing of toolkits for phishing and DoS attacks.	04
	5	Implement SQL injection attack on a target system.	02
	6	Study of stack and buffer overflow attacks.	02
	7	Analyze SYN flooding attacks through Cannon tool.	04

Suggested Case List: -NA-

