



National Institute of Technology Meghalaya

An Institute of National Importance

CURRICULUM

Programme		Master of Computer Applications							Academic Year of Regulation				2024-25		
Department		Computer Science and Engineering							Semester				IV		
Course Code	Course Name					Pre-Requisite		Credit Structure				Marks Distribution			
								L	T	P	C	INT	MID	END	Total
CA578	Cyber Security and Privacy							3	0	0	3	50	50	100	200
									CO's	Statement				Bloom's Taxonomy	
Course Objectives	To gain a thorough understanding of the CIA triad (Confidentiality, Integrity, Availability) and its application in cybersecurity to ensure data protection.					Course Outcomes		CA578.1	Able to articulate and apply the principles of confidentiality, integrity, and availability (CIA triad) to assess and enhance the security posture of digital systems.				Articulate, Apply		
	CA578.2	Able to develop and implement security policies, leveraging governance, risk management, and compliance (GRC) frameworks to mitigate risks and ensure organizational resilience.						Develop, Implement							
	CA578.3	Able to execute incident response plans effectively, manage disasters, and implement business continuity measures to minimize operational disruption and restore normalcy in the event of cyber incidents.						Execute, implement							
	CA578.4	Able to understand and apply global privacy regulations such as GDPR, DPDP, and regional privacy laws, ensuring organizational compliance and safeguarding individual privacy rights in data management						Understand, Apply							
COs	Mapping with Program Outcomes (POs)												Mapping with PSOs		
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CA578.1	3	3	3	3	2	2	1	3	2	3	1	3	2	1	1
CA578.2	3	3	3	3	2	3	2	3	3	3	3	3	3	2	2
CA578.3	3	3	3	3	2	3	2	3	3	3	3	3	3	2	2
CA578.4	3	3	3	3	2	3	2	3	3	3	2	3	3	2	2
CA578	3.00	3.00	3.00	3.00	2.00	2.75	1.75	3.00	2.75	3.00	2.25	3.00	2.75	1.75	1.75
SYLLABUS															
No.	Content												Hours	COs	
I	Introduction - Introduction to cyber security, Confidentiality, integrity, and availability. Foundations - Fundamental concepts, CIA, CIA triangle, data breach at target.												10	CO1	
II	Security management, Governance, risk, and compliance (GRC)- GRC framework, security standards. Contingency planning - Incidence response, Disaster Recovery, BCP. Cyber security policy - ESSP, ISSP, SYSSP.												10	CO2	
III	Risk Management - Cyber Risk Identification, Assessment, and Control. Cyber security: Industry perspective - Defense Technologies, Attack, Exploits. Cyber security technologies - Access control, Encryption, Standards.												10	CO3	
IV	Foundations of privacy - Information privacy, Measurement, Theories. Privacy regulation - Privacy, Anonymity, Regulation, Data Breach. Privacy regulation in Europe, Privacy: The Indian Way - Data Protection, GDPR, DPDP, Aadhar. Information privacy: Economics and strategy, Economic value of privacy, privacy valuation, WTA and WTC, Business strategy and privacy, espionage, Privacy vs safety.												12	CO4	
Total Hours												42			
Essential Readings															
1. Michael E. Whitman, Herbert J. Mattord, (2018). Principles of Information Security, 6th edition, Cenage Learning, N. Delhi.															
2. Darktrace, “Technology” https://www.darktrace.com/en/technology/#machine-learning , accessed November 2018.															
3. Van Kessel, P. Is cyber security about more than protection? EY Global Information Security Survey 2018-2019.															
4. Johnston, A.C. and Warkentin, M. Fear appeals and information security behaviors: An empirical study. MIS Quarterly, 2010.															
Supplementary Readings															
1. Arce I. et al. Avoiding the top 10 software security design flaws. IEEE Computer Society Center for Secure Design (CSD), 2014.															
2. Smith, H. J., Dinev, T., & Xu, H. Information privacy research: an interdisciplinary review. MIS Quarterly, 2011.															
3. Subramanian R. Security, privacy and politics in India: a historical review. Journal of Information Systems Security (JISSec), 2010.															
4. Acquisti, A., John, L. K., & Loewenstein, G. What is privacy worth? The Journal of Legal Studies, 2013															
5. Xu H., Luo X.R., Carroll J.M., Rosson M.B. The personalization privacy paradox: An exploratory study of decision making process for location-aware marketing. Decision															

