MGE-506: Information Systems and Data Security **2 Credits**

Prerequisites for the course:	Nil	
Objective:	To create awareness of techniques and procedures used to protect Information Systems and loss of privacy.	
Content:	Information Systems, Type of Information Systems, Computer Security –Security Functional Requirements, OSI Security Architecture: Security Attacks, Security Services, Security Mechanism. Computer Security Strategy. Basic Cryptographic Concepts; User Authentication- Token Based and Biometric Authentication, Security issues; Access Control Authentication, Types of Access Control; Authorization, Audit; Access Control and Policies; Intrusion Detection and Prevention Systems: Intruder, Host based verses Network based Intrusion Detection, Honeypots, Firewalls, Intrusion Prevention Systems, Malicious Software and Counter measures. Denial of Service Attacks; Intrusion, Detection and Prevention systems: Trusted Computing and Multilevel Security, Security Evaluation: Protection Profiles, Security Targets **Managing Security Risks** Physical Security, Physical Security Prevention and Mitigation Measures, Threat Assessment, Planning and Plan Implementation**;** Human Factors, Security Awareness, Training and Education, Organizational Security Policy, Employment Practices and Policies, Email and Internet use policies Security Audits, Security Audit Architecture, Audit Trail, IT Security Management and Risk Assessment, Security Risk Analysis, Security Safeguards, IT Security Plan, Implementation of Controls and implementation follow-up	4 Hours 5 Hours 7 Hours 6 Hours 8 hours
Pedagogy:	Lectures/ tutorials/laboratory work/ field work/ outreach activities/ project work/ vocational training/viva/ seminars/ term papers/assignments/ presentations/ self-study/ Case Studies etc. or a combination of some of these. Sessions shall be interactive in nature to enable peer group learning.	
References/Readings	1. William Stalling, Lawrie Brown, Computer Security: Principles and Practice, Pearson Education, 2010, 2. Chuck Easttom, Network Defenses and Countermeasures: Principles and Practices, Pearson Education 2014. 3. Behrouz A Forouzan, Data Communication and Networking, Tata McGraw-Hill Eduaction 2006. 4. Behrouz A Forouzan, DebdeepMukhopadhyay, Cryptography & Network Security, Tata McGraw-Hill Eduaction, Latest Edition. 5. Landoll, Douglas J; Information Security Policies, Procedures, and Standards: A Practitioner's Reference; CRC Press, Latest Edition.	
Learning Outcomes	1. An ability to understand how to mitigate security risk 2. An ability to diminish loss of reputation and business resulting from such security breach.	