IS441 Internet of Things (IoT) Security					
Credit Hours:	2-1-3	**Prerequisites**	IS201		
Course Learning Outcomes:					
S No	**CLO**		**Domain**	**Taxonomy Level**	**PLO**
1.	Understand the principles and methodologies for designing and implementing Internet of Things		Cognitive	2	1
2.	Analyze threats to IoT systems, attack vectors, current security regulations and standards and common security architectures		Cognitive	4	2
3.	Analyze IoT Software development lifecycle and study privacy management techniques		Cognitive	4	3
4.	Design and construct Secure IoT solutions and conduct security / privacy assessment		Psychomotor	4	4
Course Content:					
Information Security Vs IoT Security, Cross Collaboration for IoT, IoT Common Protocols, APS Protocols, Network and Transport Protocols, Data Link Protocols, IoT Common Devices Architecture, IoT (hardware, real-time operating systems (RTOS), Application Programming Interfaces (APIs), messaging and communication protocols and backend services, IoT Functional Areas, IoT Future, IoT Uses Today, IoT Industry and Business, IoT Future, IoT Vulnerabilities / Attacks / Risks / Countermeasures, IoT Cloud Services / Threats / Providers / Cloud Security Protocols, IoT Best Practices, IoT Software Development Lifecycle, Identity and Access Management, Reducing Privacy Risks, Compliance Program, Incident Response, Privacy by Design (PbD) principles and Privacy Impact Assessment (PIA)					
Teaching Methodology:					
Lectures, Written Assignments, Semester Project, Presentations					
Course Assessment:					
Midterm Exam, Home Assignments, Quizzes, Project, Presentations, Final Exam					
Reference Materials:					
1. Brian Russell and Drew Van Duren, Practical Internet of Things Security: Design a security framework for an Internet connected ecosystem, 2nd Edition, 2018 2. Sébastien Ziegler, Internet of Things Security and Data Protection, 2019 3. Anthony Sabella, Rik Irons-Mclean, et al, Orchestrating and Automating Security for the Internet of Things: Delivering Advanced Security Capabilities from Edge to Cloud for IoT 2018					