

Branch Name:	Computer Engineering (Software Engineering)
Program Code:	ET203
Course Title:	IOT - Internet Of Things Practical
Course Code:	2ET2030208P
Pre-requisite Course:	Fundamentals of Computer Networking and Embedded Systems.

Course Objectives: The Internet of Thing (IoT) network allows the things to communicate with each other in order to make the human life easy. Communication could be machine 2 machine or machine 2 men. After completion of this course students would be able to understand the building block, protocols and application areas of IoT. Understand what IoT technologies are used for today, what will be used in future. Realize the uprising of Internet in Mobile Devices, Cloud & Sensor Networks. Recognize challenges and research areas of IoT.

Teaching and Examination Scheme:

Credit	Teaching Scheme Hours per week				Evaluation Scheme (Marks)								
					Theory (Marks)				Practical (Marks)				Total (Marks)
	L	T	P	Total	SEE		CCA		SEE		CCA		
					Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	
1	-	-	2	2	—	—	—	—	10	25	10	25	50

Course Contents:

Unit No	Topics	Total Hours
1	Smart Parking: Monitoring of parking spaces availability in the city.	04
2	Smart Home: Home automation using IoT	02
3	Structural health: Monitoring of vibrations and material conditions in buildings, bridges and historical monuments	02
4	Noise Urban Maps: Sound monitoring in bar areas and centric zones in real time.	03
5	Smartphone Detection: Detect iPhone and Android devices and in general any device which works with WiFi or Bluetooth interfaces.	02
6	Electromagnetic Field Levels: Measurement of the energy radiated by cell stations and Wi-Fi routers	01
7	Traffic Congestion: Monitoring of vehicles and pedestrian levels to optimize driving and walking routes	03
8	Smart Lighting: Intelligent and weather adaptive lighting in street lights.	03

Reference Books:

1. The Internet of Things in the Cloud: A Middleware Perspective - Honbo Zhou – CRC Press –2012
2. Architecting the Internet of Things - Dieter Uckelmann; Mark Harrison; Florian Michahelles- (Eds.) – Springer – 2011
3. Networks, Crowds, and Markets: Reasoning About a Highly Connected World - David Easley and Jon Kleinberg, Cambridge University Press – 2010
4. Designing the Internet of Things - Adrian McEwen, Hakim Cassimally
5. Information Security Theory and Practice – Securing Internet of Things – Springer

Course Learning Outcomes (CLO):

Course Outcomes	Description	Bloom's Taxonomy Level
COL1	Identify and design the new models for market strategic interaction	Understanding (1) Applying (1)
COL2	Design business intelligence and information security for IoT, analyze various protocols for IoT	Applying (3)
COL3	Design prototype and develop embedded code for IoT, Analyze and design different models for network dynamics	Applying (3)

Mapping of CLO with PO and PSO

Course Learning Outcomes	Program Outcomes (POs)												Program Specific Outcomes(PSOs)			
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3	PSO4
CLO1	H	M	M		M											
CLO2	H	M			M							L				
CLO3	H	M	M		M											
CLO4	M	M	M		M							L				
CLO5	M	M										L				

H: High, M: Medium, L: Low