Course Title :Internet of Things			
Course Code: P18CSO654	**Semester : 6**	**L:T:P - 3 : 0 : 0**	**Credits: 3**
Contact Period : Lecture :52 Hr, Exam: 3Hr		**Weightage :CIE:50% SEE:50%**	

Course Content

Unit-1

Introduction to Internet of Things: What is the Internet of Things?: Overview and Motivations, Examples of Applications, IPv6 Role, Area of Development and Standardization, Scope of Present Investigation. **Internet of Things Definitions and Frame works:** IoT Definitions, IoT Frameworks.

Self study component: Basic Nodal Capabilities

10 Hours

Unit-2

Internet of Things Application Examples: Overview, Smart metering, Advanced Metering Infrastructure, e-Health, Body Area Networks, City Automation, Automotive applications, Home Automation, Smart Cards, Tracking, Over-The-Air-Passive surveillance, Ring of steel.

Self study component: Control application examples, Myriad other applications

10 Hours

Unit-3

Fundamental and key technologies of IOT: Identification of IoT Objects and Services, Structural Aspects of the IoT: Environment Characteristics, Traffic Characteristics, Scalability, Interoperability, Security and Privacy, Open Architecture. Key IoT Technologies: Device Intelligence, Communication Capabilities, Mobility Support, Device Power, Sensor Technology, RFID Technology, Satellite Technology. **EVOLVING IOT STANDARDS:** Overview and Approaches, IETF IPv6 Routing Protocol for RPL Roll, Constrained Application Protocol (CoAP).

Self study component: Representation State Transfer (REST), ETSI M2M, Third-Generation Partnership Project, CENELEC, IETF IPv6 Over Lowpower WPAN, ZigBee IP (ZIP), IP in Smart Objects (IPSO).

12 Hours

Unit-4

Mobility, Clouds, and Digital Tools Usher in a Connected World: The Rise of the Global Village, Into Thin Air, How Mobile Technology Changes Everything, A Clearer View through Clouds, Things Get Social, Following the Crowd, Big Data = Big Results, Focus on the Future. **The Industrial Internet Emerges**: A New Model Takes Shape, Data Matters, Sensing Gains.

Self study component: A Connected World Changes Everything, A Connected Military, Making Connections Count.

10 Hours

Unit-5

Putting the Internet of Things to Work: The IoT Meets the Real World, It's a Matter of Standards, Tackling the Adoption Curve, building a Better Sensor, Reliability Is Paramount, Putting Data into Context, The IoT: An Open Frontier.

Self study component: **A Networked Future Emerges**: A New Frontier of Technology Takes Shape, Forward Thinking, 2025: A Day in the Life, Left to Our Devices.

10 Hours

Text Books:

1. Daniel Minoli , " Building the Internet of Things with IPv6 and MIPv6: The Evolving World of M2M Communications " , ISBN: 978–81–265–5823–0 , Wiley Publications, 2016
2. Samuel Greengard , "The Internet of Things (MIT Press Essential Knowledge series) Kindle Edition

Reference Books:

1. Olivier Hersent, David Boswarthick, Omar Elloumi ,"The Internet of Things: Key Applications and Protocols", ISBN: 978–81–265–5765–3,WileyPublications, 2015.
2. HakimaChaouchi, "The Internet of Things Connecting Objects to the Web" ISBN : 978 – 1 – 84821 - 140 - 7, Willy Publications
3. Daniel Kellmereit, Daniel Obodovski, " The Silent Intelligence: The Internet of Things ",. Publisher: Lightning Source Inc; 1 edition (15 April 2014). ISBN-10: 989973700, ISBN-13: 978-0989973700.
4. Fang Zhaho, Leonidas Guibas, " Wireless Sensor Network: An information processing approach ",Elsevier, ISBN: 978-81-8147-642-5
5. Bernd Scholz - Reiter, Flori an Michahelles , " Architecting the Internet of Things " , ISBN 978 – 3 – 642 – 19156 - 5 e - ISBN 978 – 3 – 642 – 19157 - 2, Springer

Course Outcomes: At the end of the course the student will be able to:

1. Able to Identify and understand the basic concepts and Frameworks of Internet of Things
2. Understand the practical knowledge through different case studies of various levels of IOT applications examples
3. Understand the key technologies and application of different protocols on various applications
4. Understand the working knowledge related to enabling technologies like WSN
5. Demonstrating the applications of Mobile IPv6 Technologies and 6LoWPAN on IoT

CO-PO Mapping

Semester : 6	Course code : P18CSO654						Title : Internet of Things							
CO	**Statement**	**PO 1**	**PO 2**	**PO 3**	**PO 4**	**PO 5**	**PO 6**	**PO 7**	**PO 8**	**PO 9**	**PO 10**	**PO 11**	**PO 12**	**PS O1**	**PS O2**
CO1	Able to Identify and understand the basic concepts and Frameworks of Internet of Things	2	3	1		1	1	1						1	1
CO2	Understand the practical knowledge through different case studies of various levels of IOT applications examples	2	3	1		1	1	1						1	1
CO3	Understand the key technologies and application of different protocols on various applications	2	2	3	3	1	1	2		1				1	1
CO4	Understand the working knowledge related to enabling technologies like WSN	2	3	3	3	3	2	3	2	3			2	1	1
CO5	Demonstrating the applications of Mobile IPv6 Technologies and 6LoWPAN on IoT	2	3	3	3	3	3	3	3	3			2	1	1
		2	**1.8**	**1.4**		**1**		**1**						**1**	**1**