



**Sub Committee - Specialization for Curriculum Development  
Computer Concepts and Theory  
Under Graduate**

**Course Title: Advanced Internet of Things (IoT)**

**Course Code:** T3521

**Number of Credits :** 4

**Level :** 3

**Learning Objective/Outcome (s):** To enable students well versed with different IoT target boards  
To equip students design and build different business applications using IoT elements

**Pedagogy:**

Class Room  
Laboratory  
Case Studies

**Pre-learning:** Introduction to IoT

**Basics of IoT**

Desirable: Knowledge of any programming language ( Python ) and data base concepts, networking and data communication techniques.

**Course Outline:**

Sr.No.	Topics	Hours
1	Overview of Python and Java Script Libraries	7
2	Embedded Linux and Linux for real time	8
3	Sensor Networks, Communication models and Protocols Overview of Network protocols, devices and wireless network Network Model for IOT Needs, IPV6 , W LAN and WiFi Motes M2M vs IOT ; IOT vs WOT ; M2M Protocols IOT Protocols, Communication Models	10

4	Data Management and Analytics Introduction to NoSQL- Understanding the Storage Architecture, Data Modelling - Tools & Techniques, Data Storage & Integration with External Data Sources Data Analysing – Intelligent Data Analysis - Tools & Techniques , Data analytic Micro services in context of IoT, Cognitive analysis, RPA, frameworks/Case Studies	10
5	Cloud computing, Fog Computing for IOT needs	5
6	Case Study-Project Development	20
	<b>Total</b>	<b>60</b>

### Books Recommended:

1. The Internet of Things: Enabling Technologies, Platforms, and Use Cases", by Pethuru Raj and Anupama C. Raman (CRC Press)
2. "Internet of Things: A Hands-on Approach", by Arshdeep Bahga and Vijay Madiseti (Universities Press)
3. Derek Molloy, Exploring BeagleBone: Tools and Techniques for Building with Embedded Linux 1st , Kindle Edition
4. Yogesh Chavan, Programming the BeagleBone, Packt Publishing Ltd, 28-Jan-2016

### Suggested Assessment/ Evaluation Methods:

Examination  
Lab Exam

### Benchmarked against similar courses in other national/ international universities /organizations:

1. Introduction to Internet of Things, NPTEL
2. Part of PG D IOT course offered by CDAC, GOI.
3. Introduction to IoT At-a-Glance, CISCO Network Academy

S. No.	Name of the Course	Name of University/Institute where it is offered
1	Internet of Things	SIT @SIU
2	Internet Of Things Lab	SIT @SIU

Name of Members	Dr. Rajashree Jain	Yogesh Chavan			
Designation	Asso. Prof	Freelancer			
Org. / Inst.	SICSR	**			
Signature					

Name of Experts					
Designation					
Org. / Inst.					
Signature					

Signature of Dean:

Date: