

AIT507 IoT Devices and Communications

Level: 5

Credit Units: 5 Credit Units

Language: ENGLISH

Presentation Pattern: EVERY JULY

Synopsis:

This course introduces students to the basic functioning of an IoT device and will enable them to construct a simple IoT device using a simple microcontroller. This course also presents an overview on the IoT device communication technologies, viz., Zigbee, 5G, LoRa, Bluetooth and IoT protocol stacks. It also introduces the foundational concepts in internet and the components that aid in the functioning of the internet.

Topics:

- IoT circuits
- Data encoding
- Wired and wireless signal transmission
- Microcontroller programming
- Introduction to Internet
- Protocol stack
- Network addressing
- Addressing Layers
- IoT protocols
- Layer 2 vs Layer 3 forwarding
- Network Virtualization
- Message delivery

Learning Outcome:

- Discuss the components of the internet.
- Examine the need for network virtualizations.
- Analyse the layers in the protocol stack.
- Design an IoT device meeting the given specification.
- Recommend suitable encoding schemes for an IoT solution.
- Experiment data collection and transmission using an IoT device.

Assessment Strategies - Regular Semester (Evening Class):

Components	Description	Weightage Allocation (%)
Overall Continuous Assessment	PARTICIPATION 1	10
	GROUP BASED ASSIGNMENT 1	40
Overall Examinable Components	ECA	50
Total		100

*The information listed is subject to review and change.