

AIT509 IoT Networking and Infrastructure

Level: 5

Credit Units: 5 Credit Units

Language: ENGLISH

Presentation Pattern: EVERY JAN

Synopsis:

Networking and infrastructure are the backbone for IoT systems without which the data cannot flow through the system. IoT devices are different from traditional electronic devices such as laptop and mobile phones connected to the internet. Unlike the mobile phones and laptops, IoT devices have power and bandwidth constraints. Therefore, the traditional protocols used in the computer communications or mobile communications cannot be used directly. This course outlines the specific changes that are done to the existing protocols and infrastructure for the functioning of the IoT system.

Topics:

- Wired networks
- IoT Architecture
- VLAN and implementation
- MAC protocol
- Collision detection and resolution
- Power Saving Algorithms
- Low-rate wireless personal area network (LR-WPAN) protocols
- Routing
- RPL Routing
- IoT physical connections
- EMI and protection against EMI
- IoT vs environment

Learning Outcome:

- Examine the components in the wired networks.
- Distinguish the key features adopted for IoT protocols.
- Discuss the routing protocols.
- Recommend suitable protection for IoT device from the environment and other conditions.
- Plan an IoT architecture for the proposed IoT solution.
- Set up appropriate network and device parameters for the proposed IoT solution.

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
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*The information listed is subject to review and change.