

ENG233 Internet of Things (IoT)

Level: 2

Credit Units: 5 Credit Units

Language: ENGLISH

Presentation Pattern: EVERY JAN

Synopsis:

ENG233 Internet of Things (IoT) introduces the concepts of IoT and the underlying technologies. Students learn about the IoT architecture, system requirements, IoT system design, interfaces, communication protocols and data storage. This course introduces security issues in IoT systems and outlines measures to maintain the system security. Applications and case studies of IoT are discussed. Students will gain hands-on experience in designing IoT systems during the lab sessions using Raspberry pi or a suitable platform together with the relevant sensors. Students use the Electronics labs to prototype the IoT systems.

Topics:

- Introduction to IoT
- M2M, IoT and IoE
- Sensors and connected devices
- Communication protocols
- IoT architecture and standards
- IoT security
- IoT real-time data collection, (cloud) storage and analysis
- Power management and system sustainability
- IoT scalability and costing
- IoT and cloud architecture
- IoT applications and case studies
- IoT roadmap

Learning Outcome:

- Plan the requirements for an IoT system.
- Verify the IoT system design.
- Recommend suitable sensors, devices and communication protocols.
- Propose suitable platforms for real-time data collection and storage.
- Estimate the power consumption, sustainability, scalability and cost of the IoT.
- Design an IoT system.
- Appraise the IoT system security.
- Collect and analyse real-time data from an IoT system.

Assessment Strategies:

Continuous Assessment Component	Weightage (%)
GROUP BASED ASSIGNMENT	15
GROUP BASED ASSIGNMENT	15
Sub-Total	30

Examinable Component	Weightage (%)
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ECA	70
Sub-Total	70
Weightage Total	100