



Module Specification

Internet of Things

Version: 2026-27, v2.0, Approved

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Part 1: Information

Module title: Internet of Things

Module code: UFCE4T-15-2

Level: Level 5

For implementation from: 2026-27

UWE credit rating: 15

ECTS credit rating: 7.5

College: College of Arts, Technology and Environment

School: CATE School of Computing and Creative Technologies

Partner institutions: None

Field: Computer Science and Creative Technologies

Module type: Module

Pre-requisites: None

Excluded combinations: None

Co-requisites: None

Continuing professional development: No

Professional, statutory or regulatory body requirements: None

Part 2: Description

Overview: The Internet of Things (IoT), is the connecting and internetworking of multiple devices over the internet, allowing them to communicate with us, applications, and each other. The module will provide students with the opportunity to explore a range of IoT devices and communication technologies before developing their own practical solution to a given IoT case study.

Features: Not applicable

Educational aims: This module aims to provide learners with an in-depth appreciation of the Internet of Things (IoT) and the tools to design and develop their own multi-device IoT Solution to meet a project requirement.

In completion of this module learners should be able to plan, develop and test a secure multi-client IoT solution to meet a defined scenario using suitable IoT enabled hardware and software.

Contemporary software and IoT hardware tools will be used.

As well as the technical aspects of IoT, learners will also be able to identify key legislation impacting the publication of IoT Solutions, eg Data Governance (IPO, GDPR, Data Protection), privacy policies, use of data, monitoring etc.

Outline syllabus: Topics may include, but are not limited to:

Modern system architecture, key technologies,
and legal, social and ethical/moral implications to implementing these technologies.
Syllabus topics could include:

System architecture (e.g. centralised and decentralised)

Sensing technologies (e.g. sensors and actuators)

Machine-to-Machine (M2M) Communication (e.g. Wireless technologies,

Messaging/communication protocols)

Hardware and software platforms for IoT

Legal, social, ethical, and moral implications of IoT e.g. IoT security and privacy

Effective cyber security in relation to IoT

Data security and management with regards to IoT

Students will be able to cultivate independent technical judgement in the use of techniques and tools associated with IoT devices and M2M communication protocols. As well as being able to develop the ability to think conceptually and translate concepts into reality, learners will go beyond programming web applications, and develop skills in security, penetration testing and user experience.

Part 3: Teaching and learning methods

Teaching and learning methods: Introductory lectures covering the fundamentals and technical underpinning of the module for the first assessment before progressing onto practical delivery through a series of lessons, workshops and practical tasks in the classroom to develop the tools and techniques required to complete the practical assessment for this module. Students are also provided with access to a suitable hosting platform and University networking facilities for the completion of this module.

Module Learning outcomes: On successful completion of this module students will achieve the following learning outcomes.

MO1 Identify the impact of current legislation on Internet of Things (IoT) Solutions and explain common security risks present when building and publishing IoT solutions and best practice authentication techniques.

MO2 Appraise key Machine-to-Machine (M2M) protocols and IoT hardware/software solutions and apply as appropriate.

MO3 Plan, develop and test a secure IoT solution to meet a defined scenario using suitable IoT enabled hardware/software and M2M communications.

Hours to be allocated: 150

Contact hours:

Independent study/self-guided study = 114 hours

Face-to-face learning = 36 hours

Reading list: The reading list for this module can be accessed at [readinglists.uwe.ac.uk](https://uwe.rl.talis.com/index.html) via the following link <https://uwe.rl.talis.com/index.html>

Part 4: Assessment

Assessment strategy: This module consists of a single assessment in the form of a practical IoT project and associated documentation, including:

Evidence of planning and design of a IoT solution to support an agreed scenario

(e.g. Schematics, Bill of Materials (BoM))

Development and testing of a secure IoT solution consisting of a range of hardware & sensors

Deploying and test a completed IoT solution

Documenting complete IoT solution (e.g. Deployment guide, technical manual)

Understanding and adhering to relevant data and security laws and legislation.

Resit opportunities follow the same format as the first sit. Due to the size/nature of the IoT project a re-working for existing project may be used.

Assessment tasks:

Portfolio (First Sit)

Description: Practical Skills Assessment -Design, build, and test an IoT solution

Weighting: 100 %

Final assessment: Yes

Group work: No

Learning outcomes tested: MO1, MO2, MO3

Portfolio (Resit)

Description: Practical Skills Assessment -Design, build, and test an IoT solution

Weighting: 100 %

Final assessment: Yes

Group work: No

Learning outcomes tested: MO1, MO2, MO3

Part 5: Contributes towards

This module contributes towards the following programmes of study:

Digital and Technology Solutions (Network Engineer) {Apprenticeship-GlosColl
[GlosColl] BSc (Hons) 2024-25

Digital and Technology Solutions (Network Engineer) {Apprenticeship-UCW} [UCW]
BSc (Hons) 2024-25

Digital and Technology Solutions (Data Analyst) {Apprenticeship-UCW} [UCW] BSc
(Hons) 2024-25

Digital and Technology Solutions (Software Engineer) {Apprenticeship-UCW} [UCW]
BSc (Hons) 2024-25

Digital and Technology Solutions (Cyber Security Analyst) {Apprenticeship-UCW}
[UCW] BSc (Hons) 2024-25

Digital and Technology Solutions (Software Engineer) {Apprenticeship-GlosColl}
[GlosColl] BSc (Hons) 2024-25

Digital and Technology Solutions (Cyber Security Analyst) {Apprenticeship-Glos Coll}
[GlosColl] BSc (Hons) 2025-26

Digital and Technology Solutions (Network Engineer) {Apprenticeship-GlosColl}
[GlosColl] BSc (Hons) 2025-26

Digital and Technology Solutions (Software Engineer) {Apprenticeship-GlosColl}
[GlosColl] BSc (Hons) 2025-26