1. **Title of the module**

COMP8380 (CO838) - Internet of Things and Mobile Devices

1. **School or partner institution which will be responsible for management of the module**

School of Computing

1. **The level of the module (Level 4, Level 5, Level 6 or Level 7)**

Level 7

1. **The number of credits and the ECTS value which the module represents**

15 credits (7.5 ECTS)

1. **Which term(s) the module is to be taught in (or other teaching pattern)**

Spring

1. **Prerequisite and co-requisite modules**

Pre-requisite: COMP8820 Advanced Object-Oriented Programming
or COMP8710 Advanced Java for Programmers

1. **The programmes of study to which the module contributes**

Portfolio of Taught Postgraduate Programmes in Computing

1. **The intended subject specific learning outcomes.
On successfully completing the module students will be able to:**

8.1 Describe the technologies used for the Internet of Things and mobile devices, including (passive and active) sensors, actuators, the physical communications layer, communications protocols, programming frameworks, and an understanding of energy and bandwidth constraints.

8.2 Design and implement software for Internet of Things applications, including both low-level firmware on embedded devices and higher-level data processing for data obtained from sensors, taking ideas and techniques from recent research in the area.

8.3 Design and build a sensor network based on Internet of Things technology.

8.4 Develop application software of moderate complexity for a well-used mobile platform.

8.5 Critically discuss current research issues and application areas of the Internet of Things and mobile devices, including an understanding of the commercial context and privacy/security issues, and make well-informed speculations on the future of the area.

1. **The intended generic learning outcomes.
On successfully completing the module students will be able to:**

9.1 Present scientific and technological research in written and spoken form.

1. **A synopsis of the curriculum**

The module will cover a mixture of theoretical and practical topics in the area of mobile devices and the Internet of Things (IoT), that is, the use of Internet technologies to access and interact with objects in the physical world. This will include coverage of the range of sensor and actuator devices available, ways in which they communicate and compute, methods for getting information to and from IoT-enabled devices, ways of visualising and processing data gained from the IoT, and associated privacy and security issues. Application development for mobile devices such as smartphones will also be introduced using a popular mobile platform.

1. **Reading list (Indicative list, current at time of publication. Reading lists will be published annually)**

Books in this subject area become out of date very quickly.

See current reading list for suggestions.

1. **Learning and teaching methods**

Total contact hours: 30

Private study hours: 120

Total study hours: 150

1. **Assessment methods**
	1. Main assessment methods

Three programming assessments with reports, one assessed in groups (100% total)

13.2 Reassessment methods

Like for like.

1. **Map of module learning outcomes (sections 8 & 9) to learning and teaching methods (section12) and methods of assessment (section 13)**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Module learning outcome** | *8.1* | *8.2* | *8.3* | *8.4* | *8.5* |  | *9.1* |  |
| **Learning/ teaching method** |  |  |  |  |  |  |  |  |
| Lectures | x | x | x |  | x |  |  |  |
| Classes |  | x | x | x |  |  | x |  |
| Private study | x | x | x | x | x |  | x |  |
|  |  |  |  |  |  |  |  |  |
| **Assessment method** |  |  |  |  |  |  |  |  |
| Programming assessments with reports | x | x | x | x | x |  | x |  |
|  |  |  |  |  |  |  |  |  |

1. **Inclusive module design**

The School recognises and has embedded the expectations of current equality legislation, by ensuring that the module is as accessible as possible by design. Additional alternative arrangements for students with Inclusive Learning Plans (ILPs)/declared disabilities will be made on an individual basis, in consultation with the relevant policies and support services.

The inclusive practices in the guidance (see Annex B Appendix A) have been considered in order to support all students in the following areas:

a) Accessible resources and curriculum

b) Learning, teaching and assessment methods

1. **Campus(es) or centre(s) where module will be delivered**

Canterbury

1. **Internationalisation**

The topics addressed by this module relate to a field which is of international importance, given the global role of computers in today's technological innovation.  The topics covered by this module are international in nature, being identical worldwide and independent of traditional spoken language.

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**Revision record – all revisions must be recorded in the grid and full details of the change retained in the appropriate committee records.**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Date approved | Major/minor revision | Start date of the delivery of revised version | Section revised | Impacts PLOs (Q6&7 cover sheet) |
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Revised FSO Jan 2018