Electronics: sensing, logic and actuation	T212

Presentation pattern *October to June*

Module description

T212 will provide industrially relevant skills in the core aspects of analogue and digital electronics. Electronic circuits and systems will be taught within three topics, sensing, logic and actuation. Sensing gives detailed awareness of the world, logic makes smart decisions and actuation produces tangible outputs. There will also be integrative material that will bring these three topics together.

Students will use an interactive software package to build and test simple electronic circuits and will book sessions on a new remote laboratory where they will personally have full real-time control over electronic circuits and systems from their own computers.

The module will draw on mathematical concepts taught in the level 1 Engineering curriculum, diagnostic tests will support students in assessing their mathematical ability and mathematics revision session will form part of the tuition strategy.

Assessment will be through three TMAs and a final EMA. Four formative iCMA quizzes will be used throughout the module to support students' learning.

T212 is the first module in an electronics route through the BEng (Hons), and is an option through the Engineering foundation degree. T312 which will be first presented in 2019 will be the other module in the BEng (Hons) electronic route.

Person specification

The person specification for this module should be read in conjunction with the generic person specification for an associate lecturer at The Open University.

As well as meeting all the requirements set out in the generic person specification, you should have:

- recent experience and expertise in electronics;
- expertise in supporting learners with mathematical calculations relevant to electronics, including Fourier series and complex numbers;
- an interest in electronic systems combining a range of electronic specialisms such as sensing, logic and actuation;
- an understanding of the operation of microprocessors and how they are programmed;
- willingness to develop expertise in the effective use of remote laboratory experimentation and online tuition, which are integral to the module;
- the ability to facilitate online tutor group activities;
- a willingness and ability to plan and deliver engaging tuition activities in both electronics and mathematical concepts / curriculum areas both face to face and online;
- evidence of providing high quality feedback.

It would be an advantage to have:

- recent experience of working in an engineering environment;
- experience of teaching electronics and related mathematics to engineering students;
- experience of teaching adults in further education, higher education and/or distance learning;
- a teaching qualification, or professional recognition with a teaching institution such as the Higher Education Academy;
- membership of an engineering institution;
- experience of supporting students with personal and professional development planning.

Additional information

- Tuition will be provided through a mix of face-to-face and online tutorials, forums and other online tools, including the industry standard Multisim electronics package and the OpenEngineering Laboratory.

Module related details - a full explanation can be found on the website

Credits awarded to the student for the successful completion of a module:	30
Number of assignments submitted by the student:	3
Method of submission for assignments:	2
Level of ICT requirements:	2
Number of students likely to be in a standard group:	20
Salary band:	4
Estimated number of hours per teaching week:	4

There may be opportunities for ALs to undertake associated assessment work for which there will be additional payment and about which you will be contacted separately if applicable.