

Presentation pattern: October to June

Module description

T312 provides industrially relevant skills in the application of analogue and digital electronics to signal processing, control and communications. Signal processing looks at the ways that noise can be removed from signals using both analogue and/or digital filters. Control shows how the dynamic behaviour of processed (electronic/mechanical or other) can be changed to meet a desired criteria using feedback and a suitable controller. Finally communications shows how data can be transmitted and received using cables or radio waves.

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

The module builds on some of the mathematical concepts taught in the level 1 and level 2 Engineering curriculum, and mathematics revision session will form part of the tuition strategy.

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

T312 is the second module (the other is T212) in an electronics route through the BEng (Hons), and is an option through the Engineering foundation degree.

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 be able to demonstrate:

- recent experience and expertise in electronics. It would be an advantage to have recent teaching experience in electronics;
- expertise in supporting learners with mathematical calculations relevant to electronics, including Laplace transforms and complex numbers;
- an interest in teaching electronic systems combining a range of electronic specialisms such as signal processing, control and communications;
- willingness to develop expertise in the effective use of remote laboratory;
- 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:	3
Number of students likely to be in a standard group:	20
Salary band:	4
Estimated number of hours per teaching week:	4