MODULE SPECIFICATION

Part 1: Information			
Module Title	Applied Electronics		
Module Code	UFMFHT-30-1	Level	Level 4
For implementation from	2020-21		
UWE Credit Rating	30	ECTS Credit Rating	15
Faculty	Faculty of Environment & Technology	Field	Engineering, Design and Mathematics
Department	FET Dept of Engineering Design & Mathematics		
Module Type:	Standard		
Pre-requisites	None		
Excluded Combinations	None		
Co-requisites	None		
Module Entry Requirements	None		
PSRB Requirements	None		

Part 2: Description

Overview: This module introduces students to basic applications in Electronic Engineering in order to design and analyse electronic circuits. Basic circuit elements, electronic devices and operational amplifiers and their applications are introduced. Combinational and sequential digital systems as well as finite state machines are covered. Simulation tools are used to verify theoretical calculations and the associated laboratory along with the introduction of standard test and measurement equipment reinforces the lecture material. The module culminates in a project encompassing topics taught in the module.

Educational Aims: The aim of this module is to provide the technical underpinning for the design of electronic circuits, components and devices. The students will gain understanding of fundamental analogue and digital electronic concepts that are commonly applied in the design of complex electronic systems.

Outline Syllabus: Indicative syllabus content:

Current, voltage, power, energy, impedance, serial and parallel configuration of resistors, capacitors, and inductors
RLC resonant circuits and passive filters

Basic operation and applications of active devices, such as diodes, BJTs, FETs, and OpAmps
Basic applications of combinational and sequential digital logic circuits, finite state machines
Use of digital electronic CAD tools for design and simulation of combinational and sequential logic circuits

Teaching and Learning Methods: The module will be delivered using lectures to support smaller group laboratory and simulation group sessions.

Part 3: Assessment

Assessment of this module consists of two components:

Component B consists of two parts. The first part is delivered in Semester 1 and will take the form of multiple laboratory assignments completed at regular intervals during the semester. This is used to assess competency in the technical aspects of the module and provide feed forward preparation for the mid-year examination. The coursework assessment regime has been devised to provide regular feedback and feed forward to assist students' progression in practical electronics.

The second part involves two separately assessed assignments: a group research and design task taking place during project week in Semester 2 that will be assessed through a group poster at the end of the project week, and a portfolio of work performed during semester.

Component A will be an examination at the end of Semester 1 and assesses the student's understanding of the range of fundamental concepts applied to practical problems.

Resit Strategy:
For the resit assessment Component B will not have a group poster. Students will submit an individual report on a design project and lab reports on selected exercises. Component A will be a resit examination.

First Sit Components	**Final Assessment**	**Element weighting**	**Description**
Examination (Online) - Component A	✓	25 %	online Exam
Laboratory Report - Component B		30 %	Multiple laboratory reports.
Poster - Component B		20 %	Group poster display and discussion (2 pages per report).
Portfolio - Component B		25 %	5 individual lab report (2 pages each)
Resit Components	**Final Assessment**	**Element weighting**	**Description**
Examination (Online) - Component A	✓	25 %	online Exam (
Laboratory Report - Component B		55 %	Laboratory reports (2 pages per report).
Report - Component B		20 %	Individual design project

Part 4: Teaching and Learning Methods

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

	Module Learning Outcomes / **Reference** Describe and explain the basic active and passive components of electronic circuits (A1 and B1) [US1] — MO1 Apply combinational and sequential logic design principles (A1 and B1) [US1m] — MO2 Demonstrate theoretical and practical knowledge through the design of electronic circuits and components (B1 and B2) [D1m] — MO3 Record and maintain effective experimental notes (B2) [P2 and P7] — MO4
Contact Hours	**Independent Study Hours:** Independent study/self-guided study — 228 **Total Independent Study Hours:** — 228 **Scheduled Learning and Teaching Hours:** Laboratory work — 48 Lectures — 24 **Total Scheduled Learning and Teaching Hours:** — 72 **Hours to be allocated** — 300 **Allocated Hours** — 300
Reading List	*The reading list for this module can be accessed via the following link:* https://rl.talis.com/3/uwe/lists/FA935EB5-8CD9-27C5-4366-FCC4AF7BAEC1.html

Part 5: Contributes Towards
This module contributes towards the following programmes of study: Electronic and Computer Engineering [Sep][FT][Frenchay][3yrs] BEng (Hons) 2020-21 Electronic Engineering [Sep][SW][Frenchay][4yrs] BEng (Hons) 2020-21 Electronic Engineering [Sep][FT][Frenchay][3yrs] BEng (Hons) 2020-21 Robotics [Sep][SW][Frenchay][4yrs] BEng (Hons) 2020-21 Robotics [Sep][FT][Frenchay][3yrs] BEng (Hons) 2020-21 Electronic and Computer Engineering [Sep][SW][Frenchay][4yrs] BEng (Hons) 2020-21