Electronic Circuits and Devices

Module Information

2022.01, Approved

Summary Information

Module Code	4512NCCG
Formal Module Title	Electronic Circuits and Devices
Owning School	Engineering
Career	Undergraduate
Credits	20
Academic level	FHEQ Level 4
Grading Schema	40

Teaching Responsibility

LJMU Schools involved in Delivery
LJMU Partner Taught

Partner Teaching Institution

Institution Name
Nelson and Colne College Group

Learning Methods

Learning Method Type	Hours
Lecture	36
Practical	24

Module Offering(s)

Display Name	Location	Start Month	Duration Number Duration Unit
APR-PAR	PAR	April	12 Weeks
JAN-PAR	PAR	January	12 Weeks

SEP-PAR	PAR	September	12 Weeks
SEP_NS-PAR	PAR	September (Non-standard start date)	12 Weeks

Aims and Outcomes

Aims	This module introduces students to the use of electronics manufacturers' data to analyse the performance of circuits and devices, the operational characteristics of amplifier circuits, the types and effects of feedback on a circuit performance, and the operation and application of oscillators. They will also be introduced to the application of testing procedures to electronic devices and circuits, and use the findings of the tests to evaluate their operation. Among the topics included in this module are: power amplifiers, class A, B and AB; operational amplifiers, inverting, non-inverting, differential, summing, integrator, differentiator; types such as open, closed, positive and negative feedback; frequency, stability, frequency drift, distortion, amplitude, wave shapes and testing procedures.

After completing the module the student should be able to:

Learning Outcomes

Code	Number	Description
MLO1	1	Determine the operational characteristics of amplifier circuits.
MLO2	2	Investigate the types and effects of feedback on an amplifier's performance.
MLO3	3	Examine the operation and application of oscillators.
MLO4	4	Apply testing procedures to electronic devices and circuits.

Module Content

Outline Syllabus	Power amplifiersOperational amplifiers: gain, bandwidth, frequency response, input and output impedance, distortion and noise, applicationsFeedback types and effectsEffect of feedback on gain, bandwidth, distortion, noise, stability, input and output impedance Oscillators: types of oscillators, stability, frequency drift, distortion, amplitude and wave shapesTesting procedures: measuring performance, practical tests, computer simulations
Module Overview	
Additional Information	

Assessments

Assignment Category	Assessment Name	Weight	Exam/Test Length (hours)	Module Learning Outcome Mapping
Report	Assignment	100	0	MLO2, MLO3
Competency	NCC Group Pass/Fail			MLO4

Module Contacts

Module Leader

Contact Name	Applies to all offerings	Offerings
Christian Matthews	Yes	N/A

Partner Module Team

Contact Name	Applies to all offerings	Offerings