

# Linear Electronics

## Module Information

2022.01, Approved

### Summary Information

Module Code	5503EEEEBHG
Formal Module Title	Linear Electronics
Owning School	Engineering
Career	Undergraduate
Credits	10
Academic level	FHEQ Level 5
Grading Schema	40

### Teaching Responsibility

LJMU Schools involved in Delivery
LJMU Partner Taught

### Partner Teaching Institution

Institution Name
Beaconhouse Group

### Learning Methods

Learning Method Type	Hours
Lecture	22
Practical	11

### Module Offering(s)

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

## Aims and Outcomes

Aims	The module aims to broaden the students' knowledge and understanding of linear electronic circuit design, and also to provide students with practical skills necessary to design, analyse and simulate and manufacture electronic circuits.
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**After completing the module the student should be able to:**

### Learning Outcomes

Code	Number	Description
MLO1	1	Discuss analogue circuit operations and design for signal measurement, data acquisition and processing
MLO2	2	Design, evaluate and produce op-amp based filter, amplifier, D/A, and A/D circuits
MLO3	3	Use CAD tools for circuit design and simulation
MLO4	4	Use CAD tools for PCB-level, simulation

## Module Content

Outline Syllabus	1. Amplifier circuits Review of transistors: modelling, biasing and amplifiers. Linear integrated circuits: differential amplifiers, current mirrors. Power control: regulation, rectification and power amplification. 2. Op-amp applications Design of analogue systems using op-amps: active filters, oscillators, A/D converters for measurement, instrumentation and data acquisition, understanding relevant parameters such as bandwidth, precision, slew rate, feedback, stability.
Module Overview	
Additional Information	This Level 5 module will provide undergraduate students in electronic design with intermediate level tools and skills necessary to design, test and implement and manufacture electronic circuits.

## Assessments

Assignment Category	Assessment Name	Weight	Exam/Test Length (hours)	Module Learning Outcome Mapping
Exam	Exam	70	2	MLO1, MLO2
Report	Report	30	0	MLO1, MLO2, MLO3, MLO4

## Module Contacts

### Module Leader

Contact Name	Applies to all offerings	Offerings
Russell English	Yes	N/A

### Partner Module Team

Contact Name	Applies to all offerings	Offerings

