

Linear Electronics

Module Information

2022.01, Approved

Summary Information

Module Code	5504USST
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
University of Shanghai For Science and Technology

Learning Methods

Learning Method Type	Hours
Lecture	22
Practical	11

Module Offering(s)

Display Name	Location	Start Month	Duration Number Duration Unit
SEP-PAR	PAR	September	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	Analyse analogue circuit operation 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	Apply CAD tools for circuit design and simulation
MLO4	4	Apply 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