

MODULE DESCRIPTOR

MODULE TITLE	ELECTRONIC SYSTEMS		
MODULE CODE	EL2241 (L5)	CREDIT VALUE	20 CREDITS (10 ECTS)
CAMPUS	UCLAN CYPRUS		
SCHOOL	SCHOOL OF SCIENCE		

MODULE AIMS

To broaden and deepen students' experience of problem solving, using engineering principles and concepts. To enable students to further develop their analytical and experimental skills as applied to electronic circuits and systems. To enable students to design and use circuits employed in the processing and conversion of analogue signals.

MODULE CONTENT

Electronic Circuits and Systems:

Operational amplifier circuits: simple active filters, signal conditioners and waveform generators.

Transfer functions, frequency response, feedback and stability.

Transient analysis

A to D and D to A systems, including an introduction to Delta-Sigma convertors.

Power amplifiers: Class A, B, AB and D operation, power dissipation and distortion.

Power supplies and voltage regulation.

Electronic Devices and Circuits: including operation, models, circuits and applications:

PN junction diodes and Zener diodes (voltage regulation).

BJTs, JFETs and MOSFETs – BJT and FET amplifier circuits.

Use of ECAD and simulation software to support the above.

INTENDED LEARNING OUTCOMES

On successful completion of this module a student will be able to:	
1.	apply and extend analogue electronics techniques and methods introduced at level 4 to a range of electronic systems..
2.	design, analyse and evaluate the performance of circuits for the processing and conversion of analogue signals.
3.	use electronic computer aided design software for circuit design, simulation and evaluation.
4.	demonstrate practical skills associated with the observation, recording and analysis of results from practical procedures, and write technical reports including references to various sources.

TEACHING METHODS

The material will be covered in the form of lectures, tutorials and practical laboratory (design and simulation) sessions. Student-led study (e.g. students working through design examples to meet requirements) will also be an important part of the module. Tutorial sessions will be used to develop the mathematical and analytical skills and also help the student to develop skills in problem solving associated with electronic circuits. Application based design studies / laboratory work will allow the student to investigate the deeper significance of the design philosophies associated with electronic systems.

ASSESSMENT METHODS

The module is assessed through a Written examination and a Practical assignment.