

MODULE DESCRIPTOR

MODULE TITLE	ELECTRONICS AND INSTRUMENTATION		
MODULE CODE	EL1785 (L4)	CREDIT VALUE	20 CREDITS (10 ECTS)
CAMPUS	UCLAN CYPRUS		
SCHOOL	SCHOOL OF SCIENCE		

MODULE AIMS

- To introduce the fundamentals of electronics in the context of instrumentation and control systems.
- To provide the basic skills and knowledge required to specify and develop a simple electronic system.
- To develop familiarity with the use of instrumentation systems.

MODULE CONTENT

- Basic circuit theory - Electrical quantities, Ohm's law, Kirchhoff's laws, Circuit Theorems, dc and ac circuits.
- Basic electronic components - Capacitor, inductor, resistor, diode, Op-Amp. and instrumentation amplifiers.
- Electronic test equipment - Oscilloscopes, analogue and digital meters.
- Instrumentation principles - SI units, measurement errors, power supplies, measurement of voltage, current, energy and power.
- Sensor technologies for measurement of - Temperature, acceleration, velocity, force, displacement, flow, and pressure.
- Computer Control – Sampling, Quantisation, and Encoding principles, Software, Actuators.

INTENDED LEARNING OUTCOMES

On successful completion of this module a student will be able to:	
1.	Demonstrate an understanding of basic electronic circuit theory.
2.	Design simple electronic circuits using appropriate techniques.
3.	Justify the design/selection of appropriate instrumentation components.
4.	Quantify the static performance of an instrumentation system.

TEACHING METHODS

The module is delivered through a combination of lectures, guided practical work, tutorials and directed reading. Students also carry out an assignment requiring some research and practical work.

ASSESSMENT METHODS

The module is assessed through an assignment and a written examination.