Microprocessors 310 (EMK 310)

Qualification	Undergraduate
Faculty	Faculty of Engineering, Built Environment and Information Technology
Module credits	16.00
NQF Level	07
Programmes	BEng (Computer Engineering)
	BEng (Computer Engineering) ENGAGE
	BEng (Electrical Engineering)
	BEng (Electrical Engineering) ENGAGE
	BEng (Electronic Engineering)
	BEng (Electronic Engineering) ENGAGE
Prerequisites	ERS 220 GS, ELI 220 GS, ENE 310/ ENE 310#
Contact time	1 practical per week, 1 tutorial per week, 3 lectures per week
Language of tuition	Module is presented in English
Department	Electrical, Electronic and Computer Engineering
Period of presentation	Semester 1

Module content

The module provides a project-based introduction to embedded design. General microprocessor architecture and firmware development are explored with a specific focus on memory and address decoding, general embedded programming principles, microprocessor input/output and interfacing with the real world, and the functioning and application of peripheral devices such as timers, ADCs, serial communication ports and PWM. Embedded design tools are introduced through the use of a microcontroller development board and integrated development environment (IDE) that serve as the primary learning platform. Students are exposed to current and new trends in the microcontroller industry.

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