



University of Pretoria Yearbook 2022

Microprocessors 310 (EMK 310)

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| 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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