University of Pretoria Yearbook 2020

Mechatronics 421 (MEG 421)

Qualification	Undergraduate
Faculty	Faculty of Engineering, Built Environment and Information Technology
Module credits	16.00
Programmes	BEng Mechanical Engineering
	BEng Mechanical Engineering ENGAGE
Prerequisites	No prerequisites.
Contact time	1 practical per week, 3 lectures per week
Language of tuition	Module is presented in English
Department	Mechanical and Aeronautical Engineering
Period of presentation	Semester 2

Module content

Power supplies: How various voltage levels are obtained from a single source. Sensors and Actuators: Basics behind the most common actuators and sensors. Analogue: The use of MOSFETS, transistors, op-amps, diodes. Digital: Basic understanding of digital communication. Sampling theory: The effect of aliasing and the design of anti-aliasing filters. Programming: Program a PIC microcontroller using C. Control: Implementation of PID and fuzzy logic control in discrete time systems.