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# University of Pretoria Yearbook 2019

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## Mechatronics 421 (MEG 421)

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| <b>Qualification</b>          | Undergraduate   |
| <b>Faculty</b>                | <a href="#">Faculty of Engineering, Built Environment and Information Technology</a>              |
| <b>Module credits</b>         | 16.00   |
| <b>Programmes</b>             | <a href="#">BEng Mechanical Engineering</a><br><a href="#">BEng Mechanical Engineering Engage</a> |
| <b>Prerequisites</b>          | No prerequisites.   |
| <b>Contact time</b>           | 1 practical per week, 3 lectures per week   |
| <b>Language of tuition</b>    | Module is presented in English  |
| <b>Department</b>             | Mechanical and Aeronautical Engineering   |
| <b>Period of presentation</b> | 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.

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