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# University of Pretoria Yearbook 2021

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## Control systems 410 (MBB 410)

<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>NQF Level</b>	08
<b>Programmes</b>	<a href="#">BEng Mechanical Engineering</a> <a href="#">BEng Mechanical Engineering ENGAGE</a>
<b>Prerequisites</b>	MVR 320 GS
<b>Contact time</b>	2 practicals 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

Introduction to control systems. Modelling of dynamic systems. Transfer functions. Block diagrams and block diagram algebra. Linearisation of non-linear systems. Disturbance signals. Steady-state accuracy. Control systems characteristics. Analysis of control systems using Laplace transformations. Root loci. Bode diagrams. Design of compensators using bode diagram and root locus design techniques. Introduction to sampled data control systems. The Z-transform. Implementation of controllers on a computer. Controls laboratory.

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