



# University of Pretoria Yearbook 2022

## Multivariable control systems 732 (EMB 732)

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| <b>Qualification</b>          | Postgraduate   |
| <b>Faculty</b>                | <a href="#">Faculty of Engineering, Built Environment and Information Technology</a>               |
| <b>Module credits</b>         | 32.00  |
| <b>NQF Level</b>              | 08   |
| <b>Programmes</b>             | <a href="#">BEngHons Electrical Engineering</a><br><a href="#">BEngHons Electronic Engineering</a> |
| <b>Prerequisites</b>          | Introductory control course such as EBB 320  |
| <b>Contact time</b>           | 32 contact hours per semester  |
| <b>Language of tuition</b>    | Module is presented in English   |
| <b>Department</b>             | Electrical, Electronic and Computer Engineering  |
| <b>Period of presentation</b> | Semester 2   |

### Module content

Introduction to linear dynamic systems: Modes, stability, controllability, observability, multivariable poles and zeros, state-space and transfer function descriptions. Singular values and singular value decomposition. Feedback performance specifications in the frequency domain. Synthesis via state space methods. Optimal control techniques, model predictive control.

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