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# University of Pretoria Yearbook 2019

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## Power system analysis 410 (EKK 410)

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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 Electrical Engineering</a><br><a href="#">BEng Electrical Engineering Engage</a> |
| <b>Prerequisites</b>          | EKK 320 GS  |
| <b>Contact time</b>           | 1 tutorial per week, 1 practical per week, 4 lectures per week                                    |
| <b>Language of tuition</b>    | Module is presented in English  |
| <b>Department</b>             | Electrical, Electronic and Computer Engineering   |
| <b>Period of presentation</b> | Semester 1  |

### Module content

Power flow: bus admittance matrix, bus impedance matrix, Gauss Seidal and Newton Raphson methods. Fault analysis: balanced fault analysis, symmetrical components, unbalanced fault analysis. Power system protection: definite time, inverse-definite-time (IDMT), introduction to over-current and earth fault protection, distribution system protection, transmission system protection, reticulation system protection. Sizing of protection devices. High voltage control: over-voltages, transients.

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