



# University of Pretoria Yearbook 2021

## Maintenance engineering 420 (MII 420)

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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>NQF Level</b>              | 08  |
| <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>    | Separate classes for Afrikaans and English  |
| <b>Department</b>             | Mechanical and Aeronautical Engineering   |
| <b>Period of presentation</b> | Semester 2  |

### Module content

Introduction: Definition and objectives, statistical concepts. Mathematics of failure: Reliability concepts, fitting distribution to failure data. Maintenance management: Investment decisions, maintenance profit impact. Maintenance structure: Preventive, time based, condition based, corrective, design out. Data analysis: Renewable, repairable systems, Laplace trend test, analysis methodology. Optimizing maintenance strategies: Replacement/overhaul age, inspection frequencies, capital replacement, simulation. Reliability-Centred Maintenance (RCM). Maintenance systems: Components, structure, computer methods. Tribology: Friction laws, lubrication theory, contamination control. Maintenance Practice: Systems approach, management approach, modelling.

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