University of Pretoria Yearbook 2019

Maintenance engineering 420 (MII 420)

Qualification	Undergraduate
Faculty	Faculty of Engineering, Built Environment and Information Technology
Module credits	16.00
Programmes	BEng Mechanical Engineering
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Prerequisites	No prerequisites.
Contact time	3 lectures per week, 1 practical per week
Language of tuition	Separate classes for Afrikaans and English
Department	Mechanical and Aeronautical Engineering
Period of presentation	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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