



University of Pretoria Yearbook 2017

Vehicle engineering 420 (MVE 420)

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| Qualification | Undergraduate |
| Faculty | Faculty of Engineering, Built Environment and Information Technology |
| Module credits | 16.00 |
| Programmes | BEng Mechanical Engineering BEng Mechanical Engineering ENGAGE |
| Prerequisites | No prerequisites. |
| Contact time | 3 lectures per week, 1 practical per week |
| Language of tuition | Module is presented in English |
| Academic organisation | Mechanical and Aeronautical En |
| Period of presentation | Semester 2 |

Module content

Tyres: Construction, forces and moments, side force generation, rolling resistance, dynamic characteristics, tractive effort, slip, soft soil characteristics. Vehicle performance: equations of motion, supply and demand, forces acting on the vehicle, prediction of top speed, acceleration, braking, gradient ability and fuel consumption. Vehicle suspension systems: suspension concepts, kinematics, dynamic characteristics. Ride comfort: springs, dampers, suspension models, human response to vibration. Handling: steering systems, low-speed handling, steady-state handling, dynamic handling, under/oversteer, handling tests.

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