

# University of Pretoria Yearbook 2021

## Vehicle engineering 420 (MVE 420)

|                               |   |
|-------------------------------|---|
| <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>    | Module is presented in English  |
| <b>Department</b>             | Mechanical and Aeronautical Engineering   |
| <b>Period of presentation</b> | 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.

The information published here is subject to change and may be amended after the publication of this information. The [General Regulations \(G Regulations\)](#) apply to all faculties of the University of Pretoria. It is expected of students to familiarise themselves well with these regulations as well as with the information contained in the [General Rules](#) section. Ignorance concerning these regulations and rules will not be accepted as an excuse for any transgression.