

University of Pretoria Yearbook 2021

Vehicle dynamics 780 (MVI 780)

Qualification Postgraduate

Faculty [Faculty of Engineering, Built Environment and Information Technology](#)

Module credits 16.00

NQF Level 08

Programmes [BEngHons Mechanical Engineering](#)

[BScHons Applied Science Mechanics](#)

Prerequisites No prerequisites.

Contact time 21 contact hours per semester

Language of tuition Module is presented in English

Department Mechanical and Aeronautical Engineering

Period of presentation Semester 1

Module content

Tyres: Characteristics and tyre models used in simulation of ride comfort and handling. Road inputs: Classification of roads. Road profiles. Road roughness. Suspension components: springs, dampers. Controllable suspension systems. Modelling aspects. Human reaction: Human response to vibration. Driver models. Human reaction times. Vertical vehicle dynamics (ride comfort): Vibration levels in a vehicle. Simulation of ride comfort. Effect of seat characteristics on vibration levels. Test and evaluation procedures. Lateral vehicle dynamics (handling): Simulation of steady state and dynamic handling. Rollover propensity. Test procedures. Computer applications: Application of computer codes in the analysis of vehicle dynamics.

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