



University of Pretoria Yearbook 2020

Aeronautics 420 (MLV 420)

Qualification Undergraduate

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

Module content Introduction to aerodynamics and aeronautics. Fundamental physical quantities of flowing gas. Equations of state. Anatomy of an airplane. Atmosphericology. Basic aerodynamics. Potential flow. Elementary compressible flow. The Kutta-Joukowski Theorem. Introduction to viscous flow. Laminar and Turbulent Boundary Layers. Skin friction. Transition Flow Separation. Airfoil nomenclature. Lift, drag and moment coefficients. Pressure coefficients. Airfoil data. Wing properties. Circulation, downwash, and induced drag. Span efficiency. Stall. High-lift devices. Drag. Elements of airplane and flight performance. Range, endurance and payload. Principles of static stability and control.

Module credits 16.00

Programmes [BEng Mechanical Engineering](#)

[BEng Mechanical Engineering ENGAGE](#)

Prerequisites MTV 310

Contact time 1 practical per week, 3 lectures per week

Language of tuition Module is presented in English

Department Mechanical and Aeronautical Engineering

Period of presentation Semester 2

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 each student to familiarise himself or herself 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.