

University of Pretoria Yearbook 2021

Atmospheric thermodynamics 813 (AQM 813)

Qualification Postgraduate

Faculty [Faculty of Natural and Agricultural Sciences](#)

Module credits 15.00

NQF Level 09

Programmes [MSc Air Quality Management \(Coursework\)](#)

Prerequisites No prerequisites.

Contact time 1 lecture per week

Language of tuition Module is presented in English

Department Geography Geoinformatics and Meteorology

Period of presentation Year

Module content

Gas laws. Virtual temperature. The hydrostatic and hypsometric equations. Dry adiabatic processes. The first law of thermodynamics. Latent heat. Stabilities and instabilities. Dry adiabatic temperature lapse rate. Potential temperature. Inversion layers. Atmospheric moisture and saturated-adiabatic processes. Vapour pressure. Saturation and condensation. Dew and frost point. Relative humidity. Saturated adiabatic temperature lapse rate. Cloud and rain formation. The second law of thermodynamics

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