

University of Pretoria Yearbook 2022

Introduction to dynamic meteorology 263 (WKD 263)

Qualification	Undergraduate
Faculty	Faculty of Natural and Agricultural Sciences
Module credits	14.00
NQF Level	06
Programmes	BSc (Meteorology)
	BSc (Applied Mathematics)
	BSc (Geography and Environmental Science)
	BSc (Physics)
Prerequisites	WTW 124
Contact time	1 tutorial per week, 4 lectures per week
Language of tuition	Module is presented in English
Department	Geography Geoinformatics and Meteorology
Period of presentation	Semester 1

Module content

Mathematical methods for meteorology, second law of motion in spherical coordinates. Acceleration in rotating co-ordinates, fundamental forces, momentum equation. Three dimensional flow balance, conservation of mass, heat equation, thermodynamic energy equation. Introduction to finite difference methods. Numerical estimation of the geostrophic wind, vorticity and divergence. Advection of temperature. Development of a two-dimensional temperature advection model.

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