



University of Pretoria Yearbook 2016

Geometrical and space geodesy 310 (GMC 310)

Qualification	Undergraduate
Faculty	Faculty of Natural and Agricultural Sciences
Module credits	24.00
Programmes	BSc Chemistry BSc Environmental and Engineering Geology BSc Environmental Sciences BSc Geography BSc Geoinformatics BSc Meteorology BSc Physics
Prerequisites	GMC110 and WTW114/WTW 134
Contact time	2 lectures per week, 1 practical per week
Language of tuition	Double Medium
Academic organisation	Geography, Geoinf + Meteor
Period of presentation	Semester 1

Module content

Spherical trigonometry. Geometrical Geodesy: Datum surfaces and coordinate systems in Geodesy, Calculations on the ellipsoid, Datum transformations. Map projections: Projection principles, distortion determination, construction of conformal, equivalent and equidistant projections, the Transverse Mercator projection and UTM projection of an ellipsoidal earth, projection transformations. Space Geodesy: Time systems, Celestial and observer coordinate systems, Global Navigation Satellite Systems (GNSS), Satellite orbits and orbital parameters, 3-D positioning.

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