

# University of Pretoria Yearbook 2017

## Geometrical and space geodesy 310 (GMC 310)

<b>Qualification</b>	Undergraduate
<b>Faculty</b>	<a href="#">Faculty of Natural and Agricultural Sciences</a>
<b>Module credits</b>	22.00
<b>Programmes</b>	<a href="#">BSc Geography</a> <a href="#">BSc Geoinformatics</a> <a href="#">BSc Meteorology</a>
<b>Prerequisites</b>	GMC110 and WTW 114/WTW 134
<b>Contact time</b>	2 lectures per week, 1 practical per week
<b>Language of tuition</b>	Afrikaans and English is used in one class
<b>Academic organisation</b>	Geography, Geoinf + Meteor
<b>Period of presentation</b>	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. A project or assignments of at least 64 notional hours.

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