

# University of Pretoria Yearbook 2019

## Remote sensing 220 (GMA 220)

**Qualification** Undergraduate

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

**Module credits** 14.00

**Programmes** [BSc Information and Knowledge Systems](#)

[BSc Environmental Sciences](#)

[BSc Geography](#)

[BSc Geoinformatics](#)

[BSc Geology](#)

[BSc Meteorology](#)

[BSc Physics](#)

**Service modules** Faculty of Engineering, Built Environment and Information Technology

**Prerequisites** GMC 110

**Contact time** 2 lectures per week, 1 practical per week

**Language of tuition** Module is presented in English

**Department** Geography Geoinformatics and Meteorology

**Period of presentation** Semester 1

### Module content

This module will provide a thorough introduction to the basic scientific principles involved in remote sensing, and some of the applications to studies of the Earth's surface. This includes examining the basic physics of electromagnetic radiation and the complex interactions of radiation with the surface and atmosphere (i.e. spectral signatures). In addition, basic concepts of photogrammetry will be discussed. The theoretical background laid out in the first half of the module will provide the tools for examining various remote sensing applications using data obtained in different parts of the electromagnetic spectrum. The applications will include uses of satellite remote sensing data for mapping and monitoring vegetation, soils and minerals, snow and ice, water resources and quality, and urban landscapes. The laboratory section will include hands-on experience with various satellite image data sets.

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