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# University of Pretoria Yearbook 2022

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## BScHons *Geoinformatics* (02240414)

**Department** Geography, Geoinformatics and Meteorology

**Minimum duration of study** 1 year

**Total credits** 135

**NQF level** 08

### Admission requirements

1. BSc (Geoinformatics) degree **or** relevant BSc degree
2. A weighted average of at least 60% in relevant final-year modules
3. An admission examination may be required

Note: Additional modules may be required in order to reach the desired level of competency

### Additional requirements

Prospective students may be required to do additional modules to enable them to reach the desired level of study. Selection takes place before admission.

## Curriculum: Final year

### Minimum credits: 135

Fundamental credits: 10

Core credits: 110

Elective credits: 15

### Additional information:

Appropriate honours modules may be taken from the Faculty or from the School of Information Technology, as approved by the honours coordinator or Head of department.

## Fundamental modules

### Research methods 701 (GIS 701)

<b>Module credits</b>	10.00
<b>NQF Level</b>	08
<b>Contact time</b>	14 contact hours
<b>Language of tuition</b>	Module is presented in English
<b>Department</b>	Geography Geoinformatics and Meteorology
<b>Period of presentation</b>	Quarter 1

#### Module content

The module introduces students to planning, research design, scientific reading, writing and presentation as required for geoinformatics research.

## Core modules

### Research project 702 (GIS 702)

<b>Module credits</b>	35.00
<b>NQF Level</b>	08
<b>Language of tuition</b>	Module is presented in English
<b>Department</b>	Geography Geoinformatics and Meteorology
<b>Period of presentation</b>	Year

#### Module content

An approved individual Geoinformatics research project with a system design and/or spatial analysis component. The project is carried out under the guidance of a lecturer. The student is expected to obtain the respective skills necessary for the research topic. Compilation of a research proposal. Literature survey. Selecting an appropriate research method. Carrying out of the research. Preparation of a research report.

### Spatial statistics and geodesy 704 (GIS 704)

<b>Module credits</b>	15.00
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<b>NQF Level</b>	08
<b>Prerequisites</b>	GMC 310 and GIS 320 or equivalent
<b>Contact time</b>	28 contact hours per semester
<b>Language of tuition</b>	Module is presented in English
<b>Department</b>	Geography Geoinformatics and Meteorology
<b>Period of presentation</b>	Semester 1 or Semester 2

#### Module content

Principles of least squares in statistics, Spatial least squares regression, Surface interpolation using least squares and coordinate transformations. Topics in Geodesy: Space based measurement systems, sea level measurements, Determination of the geoid, earth axis orientation determination and earth dynamics.

### Advanced geospatial data 705 (GIS 705)

<b>Module credits</b>	15.00
<b>NQF Level</b>	08
<b>Prerequisites</b>	GIS 310 or equivalent
<b>Contact time</b>	28 contact hours per semester
<b>Language of tuition</b>	Module is presented in English
<b>Department</b>	Geography Geoinformatics and Meteorology
<b>Period of presentation</b>	Semester 1 or Semester 2

#### Module content

Advanced topics in geospatial data management, such as data quality, data acquisition and management, standards, spatial data infrastructure (SDI) and legislation.

### Advanced GIS 708 (GIS 708)

<b>Module credits</b>	15.00
<b>NQF Level</b>	08
<b>Prerequisites</b>	GIS 310 or equivalent.
<b>Contact time</b>	2 lectures per week
<b>Language of tuition</b>	Module is presented in English
<b>Department</b>	Geography Geoinformatics and Meteorology
<b>Period of presentation</b>	Semester 1 or Semester 2

#### Module content

Advanced topics in GIS application, such as principal component analysis, multi-criteria evaluation and other geospatial analysis methods, and their application relating to the UN Sustainable Development Goals.

### Geospatial data and services 709 (GIS 709)



<b>Module credits</b>	15.00
<b>NQF Level</b>	08
<b>Prerequisites</b>	(INF 164, INF 214, GIS 311) or equivalent.
<b>Contact time</b>	2 lectures per week
<b>Language of tuition</b>	Module is presented in English
<b>Department</b>	Geography Geoinformatics and Meteorology
<b>Period of presentation</b>	Semester 1 or Semester 2

#### Module content

Advanced topics in spatial databases, such as computational geometry, spatial data indexing and query processing, and using the web and mobile technologies for accessing, delivering and presenting geospatial data and services.

### Advanced remote sensing 705 (GMA 705)

<b>Module credits</b>	15.00
<b>NQF Level</b>	08
<b>Prerequisites</b>	GMA 320 or equivalent
<b>Contact time</b>	28 contact hours per semester
<b>Language of tuition</b>	Module is presented in English
<b>Department</b>	Geography Geoinformatics and Meteorology
<b>Period of presentation</b>	Semester 1 or Semester 2

#### Module content

The aim of the module is to provide knowledge and understanding of image analysis and information extraction methods in remote sensing. The emphasis is on equipping students with knowledge and skills necessary to process imagery to extract diverse biophysical and geospatial information. The course gives insight into the possibilities and limitations of the application of modern remote sensing/image acquisition systems for Earth and atmosphere research purposes at different levels of detail.

### Elective modules

#### Environmental policy and communication 704 (ENV 704)

<b>Module credits</b>	15.00
<b>NQF Level</b>	08
<b>Prerequisites</b>	ENV 301
<b>Contact time</b>	28 contact hours
<b>Language of tuition</b>	Module is presented in English
<b>Department</b>	Geography Geoinformatics and Meteorology
<b>Period of presentation</b>	Year

## Module content

The module introduces students to contemporary debates about the role of policy, discourse and communication in achieving environmental sustainability. The outcomes of development interventions and projects on different scales (global, national and community) are used to demonstrate and reflect on the contested nature of environmental policy formulation, implementation and monitoring. Ultimately, students are encouraged to critically engage with the politics of policy formulation and implementation; and the discursive tactics used to communicate policy-related objectives, outcomes and interventions.

### Environmental assessments 785 (ENV 785)

**Module credits** 15.00

**NQF Level** 08

**Service modules** Faculty of Health Sciences

**Prerequisites** No prerequisites.

**Contact time** 28 contact hours

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

**Department** Geography Geoinformatics and Meteorology

**Period of presentation** Year

## Module content

The aim of this module is to understand the principles and processes behind environmental assessments. The module will give an overview of the history of assessments, compare assessment processes internationally, evaluate the strengths and weaknesses of different approaches, provide an overview of the South African regulatory context and the environmental authorisation process.

### Geographical and environmental principles 710 (GGY 710)

**Module credits** 15.00

**NQF Level** 08

**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

The module provides a critical review of the structures and paradigms in which the geographical and environmental sciences are practised. Particular reference is made to the development and impact of paradigms and the interdependence of systems within space and time.

### Environmental change 789 (GGY 789)

**Module credits** 15.00

<b>NQF Level</b>	08
<b>Service modules</b>	Faculty of Health Sciences
<b>Prerequisites</b>	Limited to BScHons students.
<b>Contact time</b>	28 contact hours
<b>Language of tuition</b>	Module is presented in English
<b>Department</b>	Geography Geoinformatics and Meteorology
<b>Period of presentation</b>	Year

#### Module content

Study themes include past environmental change, causes and consequences of human-induced environmental change and South Africa and climate change.

### Special topics 707 (GIS 707)

<b>Module credits</b>	15.00
<b>NQF Level</b>	08
<b>Prerequisites</b>	No prerequisites.
<b>Contact time</b>	28 contact hours per semester
<b>Language of tuition</b>	Module is presented in English
<b>Department</b>	Geography Geoinformatics and Meteorology
<b>Period of presentation</b>	Semester 1 or Semester 2

#### Module content

A special topic in Geoinformatics linked to research specialisation in the department and/or visiting lecturers. For example, research trends and advances in a specific topic or field of specialisation in Geoinformatics. The module is presented in the form of guided advanced readings, seminars and/or discussion sessions.

The regulations and rules for the degrees published here are subject to change and may be amended after the publication of this information.

The [General Academic Regulations \(G Regulations\)](#) and [General Student Rules](#) apply to all faculties and registered students of the University, as well as all prospective students who have accepted an offer of a place at the University of Pretoria. On registering for a programme, the student bears the responsibility of ensuring that they familiarise themselves with the General Academic Regulations applicable to their registration, as well as the relevant faculty-specific and programme-specific regulations and information as stipulated in the relevant yearbook. Ignorance concerning these regulations will not be accepted as an excuse for any transgression, or basis for an exception to any of the aforementioned regulations.