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# University of Pretoria Yearbook 2021

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## BScHons Geography and Environmental Science (02240415)

**Department** Geography, Geoinformatics and Meteorology

**Minimum duration of study** 1 year

**Total credits** 135

**NQF level** 08

### Programme information

#### Renewal of registration

- i. Subject to exceptions approved by the Dean, on the recommendation of the relevant head of department, a student may not sit for an examination for the honours degree more than twice in the same module.
- ii. A student for an honours degree must complete his or her study, in the case of full-time students, within two years and, in the case of after-hours students, within three years of first registering for the degree. Under special circumstances, the Dean, on the recommendation of the relevant head of department, may give approval for a limited extension of this period.

In calculating marks, General Regulation G.12.2 applies.

Apart from the prescribed coursework, a research project is an integral part of the study.

### Admission requirements

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

### Pass with distinction

The BScHons degree is awarded with distinction to a candidate who obtains a weighted average of at least 75% in all the prescribed modules and a minimum of 65% in any one module.



## Curriculum: Final year

### Minimum credits: 135

Fundamental credits: 25

Core credits: 95

Elective credits: 15

## Fundamental modules

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

**Module credits** 25.00

**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.

## Core modules

### 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.



## Research project 702 (GGY 702)

<b>Module credits</b>	35.00
<b>NQF Level</b>	08
<b>Prerequisites</b>	No prerequisites.
<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 research project on an environmental/geography topic within the natural sciences. The project is carried out under the guidance of a lecturer. The project culminates in a research report in the format of a research paper and presentation. The student is expected to obtain the respective skills (theoretical and practical research techniques, data analysis, communication and computer skills) necessary for the research topic.

## Applied geomorphology 718 (GGY 718)

<b>Module credits</b>	15.00
<b>NQF Level</b>	08
<b>Prerequisites</b>	GGY 361 or GGY 363 or equivalent
<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

This module focuses on processes and applications of geomorphology. Topics that may be studied include: soil erosion and conservation, weathering, geomorphic response to environmental change, slope processes and geomorphological hazards. The module includes practical fieldwork and field assessments.

## Environmental change 789 (GGY 789)

<b>Module credits</b>	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.

### Advanced GIS 708 (GIS 708)

**Module credits** 15.00

**NQF Level** 08

**Prerequisites** GIS 310 or equivalent.

**Contact time** 2 lectures per week

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

**Department** Geography Geoinformatics and Meteorology

**Period of presentation** 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.

## Elective modules

### Statistics for biological sciences 780 (BME 780)

**Module credits** 15.00

**NQF Level** 08

**Service modules** Faculty of Natural and Agricultural Sciences

**Prerequisites** No prerequisites.

**Contact time** 2 Block weeks

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

**Department** Statistics

**Period of presentation** Semester 1

## Module content

The principles of experimental design as required for the selection of an appropriate research design. Identification of the design limitations and the impact thereof on the research hypotheses and the statistical methods. Identification and application of the appropriate statistical methods needed. Interpreting of statistical results and translating these results to the biological context.

### Natural woodland and forests: Ecology and management 700 (BOT 700)

**Module credits** 15.00

**NQF Level** 08

**Prerequisites** No prerequisites.



<b>Language of tuition</b>	Module is presented in English
<b>Department</b>	Department of Plant and Soil Sciences
<b>Period of presentation</b>	Semester 2

### Module content

Definitions of woodlands and forests and vegetation and forest resources in southern Africa; Classification of forest and woodland in southern Africa; Woodland dynamics including disturbance, recruitment, growth and mortality, recovery after disturbance; Ecosystem services (microclimate and nutrient cycling, carbon sequestration etc); Sustainable forest resource management (resource assessment, socio-economic assessment e.g. wood and non-forest products, participatory resource management processes); Forest health; Monitoring of resource-use impacts and adaptive management; Development of a framework for sustainable conservation and use of non-timber forest products; Climate change and resilience. Forest disease and pathology.

### Basis in environmental health 772 (EHM 772)

<b>Module credits</b>	5.00
<b>NQF Level</b>	08
<b>Prerequisites</b>	No prerequisites.
<b>Language of tuition</b>	Module is presented in English
<b>Department</b>	School of Health System and Public Health
<b>Period of presentation</b>	Year

### Introduction to environmental and occupational health 775 (EOH 775)

<b>Module credits</b>	10.00
<b>NQF Level</b>	08
<b>Prerequisites</b>	No prerequisites.
<b>Language of tuition</b>	Module is presented in English
<b>Department</b>	School of Health System and Public Health
<b>Period of presentation</b>	Year

### Selected theme 701 (GGY 701)

<b>Module credits</b>	15.00
<b>NQF Level</b>	08
<b>Prerequisites</b>	No prerequisites.
<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

A self-study module on an aspect or aspects of geographical or environmental science selected in consultation with the head of the department from: (a) themes not covered in existing options; or (b) educational subjects.

### Urban geography 780 (GGY 780)

<b>Module credits</b>	15.00
<b>NQF Level</b>	08
<b>Prerequisites</b>	GGY 301 or equivalent.
<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 main themes of the module include: overview of global urbanisation theories and processes; urban morphology and change; the administrative structure and functions of African cities and; the quality of urban life in the developing world.

### 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.

### 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.

### 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.

The information published here is subject to change and may be amended after the publication of this information. The [General Regulations \(G Regulations\)](#) apply to all faculties of the University of Pretoria. It is expected of students to familiarise themselves well with these regulations as well as with the information contained in the [General Rules](#) section. Ignorance concerning these regulations and rules will not be accepted as an excuse for any transgression.