University of Pretoria Yearbook 2020

BScHons Geoinformatics (02240414)

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

- BSc (Geoinformatics) or BSc degree that meets the prerequisites of the honours modules.
- Prospective students may be required to do additional modules to enable them to reach the desired level of study.

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.

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: 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)

Module credits	10.00
Contact time	14 contact hours
Language of tuition	Module is presented in English
Department	Geography Geoinformatics and Meteorology
Period of presentation	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)

Module credits	35.00
Language of tuition	Module is presented in English
Department	Geography Geoinformatics and Meteorology
Period of presentation	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)

Module credits	15.00
Prerequisites	GMC 310 and GIS 320 or equivalent
Contact time	28 contact hours per semester

Language of tuition	Module is presented in English
Department	Geography Geoinformatics and Meteorology
Period of presentation	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)

Module credits	15.00
Prerequisites	GIS 310 or equivalent
Contact time	28 contact hours per semester
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 geospatial data management, such as data quality, data acquisition and management, standards, spatial data infrastructure (SDI) and legislation.

Advanced GIS 708 (GIS 708)

Module credits	15.00
Prerequisites	No prerequisites.
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.

Geospatial data and services 709 (GIS 709)

Module credits	15.00
Prerequisites	(INF 164, INF 214, GIS 311) 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 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)

Module credits	15.00
Prerequisites	GMA 320 or equivalent
Contact time	28 contact hours per semester
Language of tuition	Module is presented in English
Department	Geography Geoinformatics and Meteorology
Period of presentation	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 assessments 785 (ENV 785)

Module credits	15.00
Service modules	Faculty of Health Sciences
Prerequisites	No prerequisites.
Language of tuition	Module is presented in English
Department	Geography Geoinformatics and Meteorology
Period of presentation	Semester 1

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.

Environmental change 789 (GGY 789)

Module credits	15.00
Service modules	Faculty of Health Sciences

Prerequisites	No prerequisites.
Contact time	1 lecture per week, 2 discussion classes per week
Language of tuition	Module is presented in English
Department	Geography Geoinformatics and Meteorology
Period of presentation	Year

Module content

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

Aspects of land reform and the environment 793 (GGY 793)

Module credits	15.00
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 aims to provide students with an understanding and knowledge of contemporary land reform issues against the background of international land reform experiences. The module also touches on other rural development strategies and ultimately aims to enhance the student's ability to conceptualise and analyse policy in the context of broader environmental issues.

Special topics 707 (GIS 707)

Module credits	15.00
Prerequisites	No prerequisites.
Contact time	28 contact hours per semester
Language of tuition	Module is presented in English
Department	Geography Geoinformatics and Meteorology
Period of presentation	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.

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.