University of Pretoria Yearbook 2022

BScHons *Soil Science - Environmental Soil Science* (02240600)

Department	Plant Science
Minimum duration of study	1 year
Total credits	135
NQF level	08

Admission requirements

1. Relevant BSc degree
2. A weighted average of at least 60% at final-year level
3. Introductory Soil Science and Pedology and Soil Chemistry passed at undergraduate level

Curriculum: Final year

Minimum credits: 135

Additional information:

The honours degree is awarded on the basis of formal modules passed. Students registered for the BScHons in Soil Science [Option: Environmental Soil Science] will register for all the soil science modules prescribed at honours level, as well as any other modules deemed necessary by the head of department.

Core modules

Crop production systems (I): Field crops 785 (AGR 785)

Module credits	15.00
NQF Level	08
Prerequisites	No prerequisites.
Contact time	1 practical per week, 2 lectures per week
Language of tuition	Module is presented in English
Department	Department of Plant and Soil Sciences
Period of presentation	Semester 2

Module content

Integrated agronomic, climatic, soil, botanical, economic and managerial considerations in crop production systems aimed at maximum economic yield and sustainability. The use of conservation agriculture (CA) in field crop production is becoming ever increasingly important, especially since it is directly related to Sustainable Development Goals (SDGs) 2 (food), 6 (water), 7 (energy) 13 (climate) and 15 (soil). During the semester applicable AC and SDG examples will be highlighted in case studies of specific field crops. Practicals will consist out of a trial on the experimental farm.

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.

Advanced environmental soil chemistry 771 (GDK 771)

Module credits	15.00
NQF Level	08
Prerequisites	No prerequisites.
Contact time	1 discussion class per week
Language of tuition	Module is presented in English
Department	Department of Plant and Soil Sciences
Period of presentation	Year

Module content

Advanced theoretical and experimental soil chemistry, including the organic fraction.

Advanced environmental soil physics 772 (GDK 772)

Module credits	15.00
NQF Level	08
Prerequisites	No prerequisites.
Contact time	1 discussion class per week
Language of tuition	Module is presented in English
Department	Department of Plant and Soil Sciences
Period of presentation	Year

Module content

Advanced theoretical soil physics with the emphasis on mathematical modelling of fluxes of water, heat and solutes.

Soil fertility, soil microbiology and plant nutrition 773 (GDK 773)

Module credits	15.00
NQF Level	08
Prerequisites	No prerequisites.
Contact time	1 discussion class per week
Language of tuition	Module is presented in English
Department	Department of Plant and Soil Sciences

Period of presentation	Year

Module content

Study of the latest trends and developments in plant nutrition, soil biology and soil fertility.

Research project in environmental soil science 775 (GDK 775)

Module credits	30.00
NQF Level	08
Prerequisites	No prerequisites.
Language of tuition	Module is presented in English
Department	Department of Plant and Soil Sciences
Period of presentation	Year

Module content

Research project on a practical aspect of Environmental Soil Science.Literature review, formulation of a problem statement, hypotheses and aims of the research, as well as the design and execution of a laboratory or field scale trial. Project to be written up in a specific scientific format suitable for publication with an oral and visual presentation on the research.

Environmental biophysics 750 (LKM 750)

Module credits	15.00
NQF Level	08
Prerequisites	No prerequisites.
Contact time	1 practical per week, 2 lectures per week
Language of tuition	Module is presented in English
Department	Department of Plant and Soil Sciences
Period of presentation	Semester 1

Module content

Environmental variables. Quantitative description and measurements of atmospheric environmental variables and water in organisms. Mass and energy fluxes. Quantitative description of energy fluxes in organisms' environments. Energy balances of animals and plant communities will be derived.

Scientific communication 702 (PGW 702)

Module credits	15.00
NQF Level	08
Prerequisites	No prerequisites.
Contact time	1 lecture per week, 2 seminars
Language of tuition	Module is presented in English
Department	Department of Plant and Soil Sciences

Period of presentation	Year

Module content

Principles of the scientific process. Literature accessing and article assessment. Manuscript preparation and presentation of seminars. Use of visual aids.

Elective modules

Plants, people and planet 789 (BOT 789)

Module credits	5.00
NQF Level	08
Prerequisites	No prerequisites.
Contact time	3 lectures/tutorials (1 hour each) per week, Presentation of proposal (1 hour), Self study
Language of tuition	Module is presented in English
Department	Department of Plant and Soil Sciences
Period of presentation	Year

Module content

Introduction to Community Engagement (CE) in the South African and University of Pretoria context; plant blindness. Identification of community engagement topic and activities, field work and submission of report on these activities.

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.