



# University of Pretoria Yearbook 2021

## BScHons Soil Science Environmental Soil Science (02240600)

**Department** Plant Science

**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% at final-year level
3. Introductory Soil Science and Pedology and Soil Chemistry passed at undergraduate level

### 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**

### 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)

<b>Module credits</b>	15.00
<b>NQF Level</b>	08
<b>Prerequisites</b>	No prerequisites.
<b>Contact time</b>	1 practical per week, 2 lectures per week
<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

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)

<b>Module credits</b>	15.00
<b>NQF Level</b>	08
<b>Service modules</b>	Faculty of Natural and Agricultural Sciences
<b>Prerequisites</b>	No prerequisites.
<b>Contact time</b>	2 Block weeks
<b>Language of tuition</b>	Module is presented in English
<b>Department</b>	Statistics
<b>Period of presentation</b>	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.

### Plant nutrition, soil biology and soil fertility 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



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**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.

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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.