University of Pretoria Yearbook 2020

BScAgricHons Crop Science (02241004)

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

- BScAgric (Applied Plant and Soil Sciences) or an appropriate BSc degree
- A final grade point average of at least 60% at final-year level or on recommendation from the head of department.

Other programme-specific information

Electives can be chosen out of the modules listed or any other 700-module that is presented in the Faculty of Natural and Agricultural Sciences, chosen in consultation with the Head of Department of Plant and Soil Science.

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

Core credits: 60
Elective credits: 75

Core modules

Research project in crop science 701 (PGW 701)

Module credits	30.00
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

Students will design, execute and write up a research project in any one of the subdisciplines of Crop science, eg Agronomy, Horticultural science or Pasture science.

Scientific communication 702 (PGW 702)

Module credits	15.00
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

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

Module credits	15.00
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.

Crop production systems (II): Vegetable crops 786 (AGR 786)

Module credits	15.00
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

Integrating agronomic, climatic, soil, botanical, economic and managerial considerations in crop production systems aimed at maximum economic yield and sustainability. The importance of vegetables in Sustainable Development Goals 1 (poverty), 2 (food), 3 (health), 4 (education), and 12 (reduced wastage) will be highlighted in case studies of specific vegetable crops. Practicals will consist out of a trial on the experimental farm and a visit to the Tshwane fresh produce market.

Crop physiology 761 (APS 761)

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

Module content

An overview of photosynthesis and respiration, with the aim of examining the physiological basis of yield in cropping systems. this includes an assessment of parameters for determining plant growth, factors governing yield, partitioning of photoassimilates within plants and opportunities for increasing yield. Crop growth and yield will be put into context of a changing global climate. Evaluation of the manner in which plants respond to various abiotic stresses and how plants sense changing environments. The various roles of plant growth regulators in plants and the importance of these compounds in agriculture.

Plant nutrition, soil biology and soil fertility 773 (GDK 773)

Module credits	15.00
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.

Fruit tree crops 780 (HSC 780)

Module credits	30.00
Prerequisites	No prerequisites.
Contact time	1 practical per week, 4 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

An overview of the South African fruit industry indicating economic importance and the areas of production of the various crops. Principles governing orchard establishment and orchard management, including location and site selection, crop and cultivar choices, site preparation, orchard layout and design, irrigation, fertilisation, pruning and training, the application of plant growth regulators and disease and pest management. Harvesting practices and the post-harvest physiology of fruit which determines storage protocols and the quality of the fruit reaching the consumer. Climatic requirements, phenological models, cultivars and rootstocks, fruit manipulation, physiological disorders and pest and disease complexes of subtropical and deciduous fruit crops produced in South Africa. The important role fruit production can play in achieving the Sustainable Development Goals will be highlighted, with emphasis placed on the sustainable use of resources.

Environmental biophysics 750 (LKM 750)

Module credits	15.00
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.

Plant production: Herbicides and control 712 (PPR 712)

Module credits	15.00
Prerequisites	No prerequisites.
Contact time	1 discussion class 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

Weeds and their importance in Southern Africa. Properties and uses of herbicides.
Herbicides in soils and their mode of action in plants.

Agroforestry 713 (PPR 713)

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

Module content

Agro-ecological zones (climate and soil); trees for fruit, fodder, fuel and/or timber; intercropping or alley cropping with grains, vegetables or pastures; management (including aspects such as nursery production, establishment, fertilization, pest control) and utilization/marketing.

Rangeland management 781 (WDE 781)

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

Module content

The development of rangeland management strategies integrating ecological and physiological principles with economic and sociological constraints to achieve desired objectives whilst ensuring the conservation, and where necessary, the recuperation of natural resources.

Pasture science 782 (WDE 782)

Module credits	15.00
Prerequisites	No prerequisites.
Contact time	2 lectures per week
Language of tuition	Module is presented in English
Department	Department of Plant and Soil Sciences
Period of presentation	Year

Module content

The identification of adapted pasture and fodder species (including grasses, legumes, fodder trees and drought tolerant crops) for different agro-ecological areas. The establishment, fertilization and irrigation requirements of different pastures. The management requirements when utilized as green grazing, standing hay or conserved feed.

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.