University of Pretoria Yearbook 2017

BScAgricHons Crop Science (02241004)

Duration of study	1 year
Total credits	135

Programme information

The MSc degree is conferred on the grounds of a dissertation and such additional postgraduate coursework as may be prescribed.

Renewal of registration
As long as progress is satisfactory, renewal of the registration of a master's student will be accepted for the second year of the study. Registration for a third and subsequent years will only take place when the Student Administration of the Faculty receives a written motivation that is supported by the head of department and Postgraduate Studies Committee.

General
Candidates are required to familiarise themselves with the General Regulations regarding the maximum period of registration and the requirements on the submission of a draft article for publication.

Admission requirements

The admission requirement is a BScAgric (Applied Plant and Soil Sciences) degree or equivalent qualification, or an appropriate BSc degree after consultation with the Head of Department. A South African equivalent aggregate mark of 60% is required for all the modules taken in the final year of undergraduate studies. Students are selected on merit.

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

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
Academic organisation	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
Academic organisation	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.

Research methodology 704 (PGW 704)

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
Academic organisation	Plant and Soil Sciences

Period of presentation	Semester 2

Module content

Basic experimental designs. Measurements and control over experimental error. Factorial experiments and interactions. Analysis of variance (ANOVA) and data interpretation.

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
Academic organisation	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. Case studies of specific field crops.

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

Module credits	15.00
Prerequisites	No prerequisites.
Contact time	2 lectures per week, 1 practical per week
Language of tuition	Module is presented in English
Academic organisation	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. Case studies of specific vegetable crops.

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

Module credits	15.00
Prerequisites	No prerequisites.
Language of tuition	Module is presented in English
Academic organisation	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.

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
Academic organisation	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 practical per week, 1 lecture per week, 1 discussion class per week
Language of tuition	Module is presented in English
Academic organisation	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
Academic organisation	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
Academic organisation	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.

Environmental biophysics 750 (LKM 750)

Module credits	15.00
Prerequisites	No prerequisites.
Contact time	2 lectures per week, 1 practical per week
Language of tuition	Module is presented in English
Academic organisation	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.

Crop physiology 761 (APS 761)

Module credits	15.00
Prerequisites	No prerequisites.
Contact time	Fortnightly practicals, 2 lectures per week
Language of tuition	Module is presented in English
Academic organisation	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.

Fruit tree crops 780 (HSC 780)

Module credits	30.00
Prerequisites	No prerequisites.
Contact time	4 lectures per week, 1 practical per week
Language of tuition	Module is presented in English
Academic organisation	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.