University of Pretoria Yearbook 2022

BScHons *Entomology* (02240704)

Department	Zoology and Entomology
Minimum duration of study	1 year
Total credits	135
NQF level	08

Admission requirements

1. Relevant BSc degree with Entomology (or equivalent) passed at final-year level
2. A weighted average of at least 65% at final-year level
3. An admission examination may be required

Note: Additional modules may be required in order to reach the desired level of competency

Examinations and pass requirements

A pass mark is required for all the components of the honours study programme.

Curriculum: Final year

Minimum credits: 135

Core credits: 81
Elective credits: 54

Core modules

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.

Research project 701 (ZEN 701)

Module credits	68.00
NQF Level	08
Prerequisites	No prerequisites.
Language of tuition	Module is presented in English
Department	Zoology and Entomology
Period of presentation	Semester 1 or Semester 2

Module content

Research project

Research methods and scientific communication 713 (ZEN 713)

Module credits	13.00
NQF Level	08
Prerequisites	No prerequisites.

Language of tuition	Module is presented in English
Department	Zoology and Entomology
Period of presentation	Semester 1 or Semester 2

Module content

Basic skills in philosophy of science; research planning; scientific writing; scientific public speaking; an essay, two oral presentations, prescribed reading and an oral exam.

Elective modules

Land reclamation and restoration ecology 791 (BOT 791)

Module credits	15.00
NQF Level	08
Service modules	Faculty of Humanities
Prerequisites	No prerequisites.
Contact time	Block: 6 weeks per semester,3 discussions per week
Language of tuition	Module is presented in English
Department	Department of Plant and Soil Sciences
Period of presentation	Semester 1

Module content

This module will provide students with the skills to use biophysical information and data obtained by undertaking a natural resource inventory. This will be supported by taught methods of critically evaluating data and information obtained through assessment methodologies and an understanding of sampling design (choosing reference sites, spatial replication) and monitoring methods (e.g. recording biomass vs vegetation cover vs species richness; aspects of seed biology etc.). Through the additional understanding of ecological and agricultural concepts (e.g. productivity, decomposition rate, carbon uptake, pollinator abundance, erosion protection, dust reduction) students will acquire the skills to provide reclamation and restoration solutions to land degradation challenges in South Africa.
A site visit or field trip during which students will get exposed to the realities of reclamation and restoration and apply their knowledge and skills will be a compulsory component of this module.

Systematics, evolution and biogeography 703 (ZEN 703)

Module credits	13.00
NQF Level	08
Prerequisites	No prerequisites.
Contact time	20 lectures per week
Language of tuition	Module is presented in English
Department	Zoology and Entomology
Period of presentation	Semester 1

Module content

The object of this module is to introduce students to several contemporary problem areas in systematics, evolutionary theory and biogeography, and to use this as a basis for exploring current approaches and methods in systematics.

Environmental physiology 704 (ZEN 704)

Module credits	13.00
NQF Level	08
Prerequisites	No prerequisites.
Contact time	4 discussion classes per week
Language of tuition	Module is presented in English
Department	Zoology and Entomology
Period of presentation	Semester 1

Module content

Photoperiodism and chronobiology – the ability of animals to measure daylength, the concept of circadian rhythm and the nature of the clock which drives such processes. Water availability and temperature – physiological responses of animals to changing water availability and temperature in the context of global climate change. Regulation of reproduction – physiological mechanisms which couple reproduction to external and internal environmental factors.

Principles in applied ecology 705 (ZEN 705)

Module credits	13.00
NQF Level	08
Prerequisites	No prerequisites.
Contact time	4 discussion classes per week
Language of tuition	Module is presented in English
Department	Zoology and Entomology
Period of presentation	Semester 1

Module content

The module focuses on forces that drive population and community patterns and processes across temporal and spatial scales. Attention is given to the scientific application of ecological and macro-ecological principles that relate to short- and long-term population and community responses to environmental change. Group discussions based on current literature provide opportunities to apply theoretical principles to problem solving.

Integrated pest management in Africa 707 (ZEN 707)

Module credits	13.00
NQF Level	08
Prerequisites	No prerequisites.

Contact time	1 discussion class per week
Language of tuition	Module is presented in English
Department	Zoology and Entomology
Period of presentation	Semester 1

Module content

Pest outbreaks and the practice of integrated pest management using different control methods; philosophy of IPM; socio-economic implications; politics and legislation; pest models; decision tools and techniques.

Mammal ecology 710 (ZEN 710)

Module credits	13.00
NQF Level	08
Prerequisites	No prerequisites.
Contact time	4 discussion classes per week
Language of tuition	Module is presented in English
Department	Zoology and Entomology
Period of presentation	Semester 2

Module content

Contemporary issues in mammal ecology; the focus will be on current understanding at individual, population, community and ecosystem levels.

Behavioural ecology 712 (ZEN 712)

Module credits	13.00
NQF Level	08
Prerequisites	No prerequisites.
Contact time	4 discussion classes per week
Language of tuition	Module is presented in English
Department	Zoology and Entomology
Period of presentation	Semester 2

Module content

The use of ecological and evolutionary processes to explain the occurrence and adaptive significance of behaviour patterns. Empirical, comparative analyses relating behaviour to environment will be addressed, including the use of behavioural processes to predict ecological patterns.

Insect-plant interactions 782 (ZEN 782)

Module credits	13.00
NQF Level	08

Prerequisites	No prerequisites.
Contact time	4 discussion classes per week
Language of tuition	Module is presented in English
Department	Zoology and Entomology
Period of presentation	Semester 2

Module content

An overview of the complex world of insect-plant interactions. Insects and plants have co-occurred and co-evolved on this planet for at least 400 million years, and in many systems insects are the primary consumers of plant tissue. The diverse strategies and counter-strategies that have evolved at the interface between herbivory and plant defences will be examined, using case studies and applying unifying theory wherever possible.

Global climate change and biodiversity 783 (ZEN 783)

Module credits	13.00
NQF Level	08
Prerequisites	No prerequisites.
Contact time	1 lecture per week, 3 discussion classes per week
Language of tuition	Module is presented in English
Department	Zoology and Entomology
Period of presentation	Semester 1

Module content

The module aims to provide students with an understanding of global climate change and its impact on the conservation of biodiversity.

Contemporary research techniques 784 (ZEN 784)

Module credits	13.00
NQF Level	08
Prerequisites	No prerequisites.
Contact time	4 discussion classes per week
Language of tuition	Module is presented in English
Department	Zoology and Entomology
Period of presentation	Semester 2

Module content

Stable isotope ecology – applications of stable isotope-based techniques in zoological research, including (i) tracking animal movements, (ii) dietary reconstruction, (iii) delineation of trophic levels, (iv) tracing nutrient allocation to reproduction, (v) forensic applications, and (vi) doubly-labelled water and water tracer applications. Stress hormones – the spectrum of stress molecules, how they are regulated, what their impacts are, and how they are measured to reflect acute and chronic stress. Photogrammetry – (i) appropriate equipment for photogrammetry, (ii) photographic techniques for photogrammetric use, (iii) photogrammetry software, (iv) building three-dimensional models, (v) measuring models. Applications of molecular biology to conservation genetics, infectious disease epidemiology and ecology, forensics (host and pathogen-based) and diagnostics.

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.