University of Pretoria Yearbook 2022

MSc *with specialisation in Global One Health: diseases at the human-animal interface* (08251030)

Department	Veterinary Tropical Diseases
Minimum duration of study	2 years
Total credits	180
NQF level	09

Programme information

Also consult the General Academic Regulations G30 – G41 and Faculty regulations.

This 2-year master programme is offered by the Department of Veterinary Tropical Diseases of the University of Pretoria (South Africa) in collaboration with the Institute of Tropical Medicine in Belgium.

This degree is offered as a combination of e-learning, face-to-face teaching and a compulsory collaborative induction/field-workshop. It has the following components:

- A two week compulsory induction/field-workshop
- Four compulsory core modules (AHE 811, EPL 802, OHB 801 and VRM 812 for 9, 12, 12 and 9 credits respectively) – all taken in the first semester of the first year.
- Elective modules: Elect modules to the value of 48 credits from the list of elective modules below, and ensure that the following rules are adhered to:
  a. **Choose two modules to the value of 18 credits from the following skills-based modules:** ASR 811, AVB 817, AVH 811, AVV 811, EPL 804, TCK 811 and VMB 816.
  b. **Choose three modules from the following list of theory-based modules:** AHE 812, AHE 813, AHE 814, AHE 815, AHE 816, EPL 803, GVD 811 and TBD 814.
- Mini-dissertation (90 credits).

Additional requirements

According to the Bologna Bachelor-Master structure, a master's degree is required to register at ITM. (Note: A four-year BSc degree in the South African context is equivalent to a master's degree in the Bologna system). Two years of professional experience might be required in certain cases. It remains the prerogative of the head of department (UP) or course director (ITM) to require, in addition to the entrance requirements already mentioned, the successful completion of an admissions test before registration. A student may also be required to pass a proficiency test in English (TOEFL) at an acceptable level. The web-based/online nature of the modules requires basic computer skills in order to successfully participate in the degree programme.

Students are required to confirm whether a module will be presented in any particular year.

Examinations and pass requirements

A minimum examination mark of 50% is required in each of the modules where a semester or year mark is not required. However, where a semester or year mark is required, the latter will contribute 50% to the final mark. A subminimum of 40% is required in the examination and a final mark of at least 50 % to pass the module. Instructions regarding requirements for semester, year or examination marks are published in the study guides, for the specific attention of candidates.

The MSc coursework degree is conferred by virtue of the successful completion of examinations on the coursework modules and a mini-dissertation.

If a student fails a module, the student will have to repeat the module the following year. A module cannot be repeated more than twice.

Research information

Also consult the General Academic Regulation G39.

The coursework master's degree consists of coursework modules as well as a mini-dissertation which is divided equally between the research and coursework as 90 credits each. It should be emphasized that a mini-dissertation is not a complete research-based master's dissertation and is of limited scope and extent. The content should cover enough work for a case report or short communication. The basic requirements and Faculty expectations of a coursework master's degree mini-dissertation are:

i. The student should show the ability to undertake a research project and write up the project.
ii. The student does not need to make an original contribution to science, but still show the ability to do research.
iii. Please note that explicit hypothesis-testing, i.e. experimental work is not necessarily mandatory.

Candidates must submit a mini-dissertation which deals with an applied field of study. The topic is determined in consultation with the supervisor and the relevant head of department, and must be approved according to Faculty guidelines. The mini-dissertation is based on an applied research project or related research projects which need not be original), planned and reported by the candidate. Assistance with statistical processing, applied specialised procedures, etc. is allowed, but must be acknowledged.

Research undertaken is conducted in accordance with the University's Code of ethics for scholarly activities. All research proposals must be submitted for ethics clearance/approval/exemption to the relevant faculty research and/or research ethics committee. Faculty research ethics committees have the authority to consider and approve or reject research proposals within the guidelines of the general policy.

Examinations and pass requirements
The MSc coursework degree is conferred by virtue of the successful completion of examinations on the coursework modules and a mini-dissertation.

The Faculty does make provision for supplementary and special examinations as per General Academic Regulations G37.4 and G37.5.

For the coursework, a minimum examination mark of 50% is required in each of the modules where a semester or year mark is not required. However, where a semester or year mark is required, the latter will contribute 50% to the final mark. A subminimum of 40% is required in the examination and a final mark of at least 50 % to pass the module. Instructions regarding requirements for semester, year or examination marks are published in the study guides, for the specific attention of candidates.

In addition to what is set out above, the following also applies to the coursework modules:

i. A student that fails two or more core modules (AHE 811, EPL 802, OHB 801 and VRM 812) during the first semester of year 1, will not be allowed to continue in the MSc programme.
ii. If a student fails a coursework module, he/she will have to repeat the module the following year. A module cannot be repeated more than twice.

Examinations and pass requirements related to mini-dissertations
Also consult the General Academic Regulation G39 for Preparation and submission of dissertation, Technical editing of the dissertation, Evaluation of the dissertation, Appointment of the examination panel, Criteria for evaluation, Examiners' reports, Finalisation of reports.

A mini-dissertation is submitted to the Head: Student Administration, before the closing date for the relevant graduation ceremonies as announced annually (i.e. 30 October or 31 March to qualify for the Autumn or Spring graduation, respectively), after permission is granted by the supervisor and co-supervisor(s). (Also consult the General Academic Regulation G39 with regard to the submission and technical editing of the thesis).

If a mini-dissertation is submitted after the due date specified above, the student takes the risk that the examination of the dissertation may be delayed and the student will not be considered for the graduation concerned. A student will only be allowed to graduate if the student has successfully complied with all the requirements for the particular programme.

In addition to what is set out above, the mini-dissertation will include an oral examination conducted face to face or via video conference. The oral examining panel will include an examiner from each institute (excluding the supervisor). A mark constituting a maximum of 10% of the final mini-dissertation mark must be granted. The dissertation will be examined by one internal and one external examiner as stipulated by the UP regulations; this mark will constitute 90% of the final mini-dissertation mark.

The minimum pass mark is 50%. The Dean, on the recommendation of the relevant head of the department, may permit a candidate who has failed, to submit an amended mini-dissertation for final adjudication.

Retention and preservation of research data
Also consult the General Academic Regulations G39.

The data generated through the research conducted must be managed in accordance with the University of Pretoria's Research Data Management policy and the related Research Data Management procedure.

Non-disclosure of the contents of a study (Embargo): Where part or all of the contents of the master's study must remain confidential, the supervisor will be required to submit an application in writing to Faculty Postgraduate and Research committee setting out the grounds for such a request and indicating the duration of the period of confidentiality. This period would normally not exceed 2 (two) years. The committee considers the application and either approves it or refers it back to the supervisor. The faculty must keep record of the decisions and the embargo, and the information must be shared with the Department of Library Services.

Compliance with degree requirements and degree privileges
Also consult the General Academic Regulations G40.

i. A coursework master's degree, will be conferred on a student only after the successful completion of every requirement of each component of the relevant degree programme, including the achievement of a pass mark for each of the prescribed coursework modules, the submission and successful evaluation of the mini-dissertation or other research-relevant output, and compliance with all the requirements for the particular programme.
ii. A coursework master's degree is not deemed to be completed if the electronic version of the mini-dissertation has not been submitted to the relevant faculty administration prior to the date of closure of the graduation/finalist list for the forthcoming graduation ceremony.

iii. No one is entitled to any privileges pertaining to a coursework master's degree before the qualification has been conferred on him or her at a graduation ceremony. In respect of professional registrations, faculties may issue confirmation letters to the relevant professional bodies prior to the graduation ceremonies.

Pass with distinction

Qualification with distinction: A coursework master's degree is awarded with distinction if a student meets the following requirements:

a. Obtained a weighted average of at least 75% (not rounded) in the coursework modules needed to comply with degree requirements, and
b. Obtained a final mark of 75% or above for the mini-dissertation; and
c. Completed the qualification within the maximum period allowed for master's study, but not in less than the prescribed minimum period of one academic year. Note: the maximum allowable time is twice that of the prescribed duration time period in relation to postgraduate students who study part-time (i.e. study while working full-time).
d. In the case of a coursework master's degree, did not fail or repeat any module during an additional examination. The result of a discontinuation of a module(s) will not be considered when calculating a qualification with distinction.

Curriculum: Year 1

Fundamental modules

Research methodology 812 (VRM 812)

Module credits	9.00
NQF Level	09
Language of tuition	Module is presented in English
Department	Veterinary Tropical Diseases
Period of presentation	Semester 1 and Semester 2

Module content

A web-based introductory module in research methodology that includes planning and undertaking a research project or clinical trial, collecting and analysing data, scientific writing, and enabling preparation and presenting of a research protocol.

Core modules

Laboratory diagnostics 811 (AHE 811)

Module credits	9.00
NQF Level	09
Prerequisites	No prerequisites.
Language of tuition	Module is presented in English
Department	Veterinary Tropical Diseases
Period of presentation	Semester 1

Module content

This module deals with the concepts and principles of field and laboratory diagnosis of infectious and parasitic diseases of livestock and wildlife including aspects of specimen collection and shipment, interpretation of laboratory results and basic laboratory management.

Basic epidemiology 802 (EPL 802)

Module credits	12.00
NQF Level	09
Prerequisites	No prerequisites.
Language of tuition	Module is presented in English
Department	Veterinary Tropical Diseases
Period of presentation	Semester 1

Module content

Compulsory module.
A web-based introductory module in epidemiology that includes general concepts, quantification of disease prevalence and incidence, interpretation of diagnostic test results, basic sampling designs and basic statistics.

One health: basic concepts 801 (OHB 801)

Module credits	12.00
NQF Level	09
Language of tuition	Module is presented in English
Department	Veterinary Tropical Diseases
Period of presentation	Semester 1

Module content

This module will introduce students to the philosophy and practice of "One Health", an approach that recognises that the health and well-being of humans, domestic animals, wildlife and the ecosystems in which they live and function and intrinsically connected.

Elective modules

Advanced One Health 812 (AHE 812)

Module credits	12.00
NQF Level	09
Prerequisites	No prerequisites.
Language of tuition	Module is presented in English
Department	Veterinary Tropical Diseases
Period of presentation	Semester 2

Module content

(elective)

This module will provide students with an understanding of health in particular social-ecological systems, with a focus on understanding the relationship between ecosystem health and infectious diseases of animals and humans, in order to improve disease control policies, ecosystem sustainability, food security and rural development.

Advanced one health: public health 813 (AHE 813)

Module credits	12.00
NQF Level	09
Prerequisites	No prerequisites.
Language of tuition	Module is presented in English
Department	Veterinary Tropical Diseases

Period of presentation	Semester 1

Module content

(elective)

This module will focus on the human dimension of One Health. It introduces an approach to formulate a zoonotic disease control programme. After the module students should be able to explain the disease burden of a particular zoonosis, to develop an epidemiological model, to analyse its broader determinants, to appraise and prioritise possible interventions based on effectiveness, cost, feasibility and acceptability and to identify implementation challenges in a specific public health system's context.

Animal health management: high impact and emerging diseases 814 (AHE 814)

Module credits	12.00
NQF Level	09
Prerequisites	No prerequisites.
Language of tuition	Module is presented in English
Department	Veterinary Tropical Diseases
Period of presentation	Semester 2

Module content

(elective)

This module deals with the concepts and principles of basic animal health management for livestock production and trade in livestock and livestock commodities. There will be a special focus on the management of infectious diseases that have a high impact in terms of international trade because of their detrimental effects on livestock production and health and/or human health. The module will also examine the drivers for emerging and re-emerging diseases with special reference to the livestock/wildlife/human interface.

Advanced One Health: policy 815 (AHE 815)

Module credits	12.00
NQF Level	09
Prerequisites	No prerequisites.
Language of tuition	Module is presented in English
Department	Veterinary Tropical Diseases
Period of presentation	Semester 1

Module content

(elective)

Policy is generally defined as a plan of action on the part of a government, business or other organisation intended to influence decisions and actions in a particular direction. This module introduces the key principles in policy making in regard to animal health and trade in livestock or livestock products. It will consider the essentials of "effective" policy creation, the role of science and uncertainty in policy, policy analysis and the role of government versus the private sector in animal health.

Surveillance and survey methodology 816 (AHE 816)

Module credits	12.00
NQF Level	09
Prerequisites	No prerequisites.
Language of tuition	Module is presented in English
Department	Veterinary Tropical Diseases
Period of presentation	Semester 1

Module content

(elective)

This module deals with the concepts and principles of terrestrial animal (livestock and wildlife) health surveillance; including the design; implementation and evaluation of surveillance system; the data sources; tools and methods available to perform effective surveillance; and the evaluation and analysis of surveillance data. This module will also provide an introduction to geographic information systems (GIS) and provide basic skills on how to use GIS in epidemiological studies.

Applied serology 811 (ASR 811)

Module credits	9.00
NQF Level	09
Prerequisites	No prerequisites.
Contact time	8 web-based periods per week
Language of tuition	Module is presented in English
Department	Veterinary Tropical Diseases
Period of presentation	Semester 2

Module content

Skills training

The module will enable delegates to develop proficiency in procedures in veterinary immunology and serology, and to implement and standardize different serological techniques with special emphasis on ELISA and FA techniques.

Applied veterinary bacteriology 817 (AVB 817)

Module credits	9.00
NQF Level	09
Prerequisites	No prerequisites.
Language of tuition	Module is presented in English
Department	Veterinary Tropical Diseases
Period of presentation	Semester 2

Module content
Skills training

This module provides an introduction to the basic concepts of veterinary bacteriology, from sampling and handling of specimens to the methods and tools used for isolation and identification of bacteria of veterinary significance in the laboratory.

Applied veterinary helminthology 811 (AVH 811)

Module credits	9.00
NQF Level	09
Prerequisites	No prerequisites.
Language of tuition	Module is presented in English
Department	Veterinary Tropical Diseases
Period of presentation	Semester 2

Module content
Skills training

This module provides an introduction to the control of helminth infections of economic or public health importance in the tropics. The focus is on transmission of helminths of livestock and on sustainable methods to break the lifecycles. Practical study includes common parasitological techniques and interpretation of parasitological parameters.

Applied veterinary virology 811 (AVV 811)

Module credits	9.00
NQF Level	09
Prerequisites	No prerequisites.
Language of tuition	Module is presented in English
Department	Veterinary Tropical Diseases
Period of presentation	Semester 2

Module content
Skills training

Theoretical and practical study of the use of cell cultures and embryonated chicken eggs for the isolation and identification of viruses.

Advanced epidemiology 803 (EPL 803)

Module credits	12.00
NQF Level	09
Prerequisites	EPL 802 (with a minimum of 60% final mark)
Language of tuition	Module is presented in English

Department	Veterinary Tropical Diseases
Period of presentation	Semester 2

Module content

This module builds on the subjects dealt with in the 'Basic Epidemiology' module. It includes advanced statistical models (generalised linear model, mixed models, survival analysis) and introduces quantitative risk assessment.

Applied epidemiology 804 (EPL 804)

Module credits	12.00
NQF Level	09
Prerequisites	EPL 803
Language of tuition	Module is presented in English
Department	Veterinary Tropical Diseases
Period of presentation	Semester 1

Module content

Skills training

This module is a hands-on theoretical and practical introduction to epidemiological modelling, including simulation modelling. It assumes successful completion of the basic and applied epidemiology modules.

General vector-borne diseases 811 (GVD 811)

Module credits	9.00
NQF Level	09
Language of tuition	Module is presented in English
Department	Veterinary Tropical Diseases
Period of presentation	Semester 1

Module content

The module gives an overview of the most important vectors and vector borne diseases, their importance and insight on the importance of the biology of the vectors on the transmission of the micro-organisms they transmit.

Ticks and tick-borne diseases 814 (TBD 814)

Module credits	9.00
NQF Level	09
Prerequisites	No prerequisites.
Language of tuition	Module is presented in English
Department	Veterinary Tropical Diseases
Period of presentation	Semester 2

Module content
(elective)

This module gives an overview of the economically important ticks and tick-borne parasites of domestic and wild animals, their importance and insight the biology of the vectors on the transmission of the micro-organisms they transmit.

Selected tick identification 811 (TCK 811)

Module credits	9.00
NQF Level	09
Prerequisites	No prerequisites.
Language of tuition	Module is presented in English
Department	Veterinary Tropical Diseases
Period of presentation	Semester 2

Module content

Skills training (elective)

The objective of this module is to provide the basic knowledge of the biology, ecology, life-cycles, and importance of ticks. There will be a practical session to acquire the necessary laboratory skills to identify ticks of companion animals, equids, ruminants and wildlife.

Applied molecular biology 816 (VMB 816)

Module credits	9.00
NQF Level	09
Prerequisites	No prerequisites.
Language of tuition	Module is presented in English
Department	Veterinary Tropical Diseases
Period of presentation	Semester 2

Module content

Skills training

Theoretical and practical study in the principles and applications of PCR, cloning and DNA sequencing techniques.

Curriculum: Final year

Core modules

Mini-dissertation 895 (AHE 895)

Module credits	90.00
NQF Level	09
Prerequisites	No prerequisites.
Language of tuition	Module is presented in English
Department	Veterinary Tropical Diseases
Period of presentation	Year

Module content

A mini-dissertation must be submitted on an appropriate topic depending on the field of interest of the student. A research project of limited scope must be undertaken and written in the format of a mini-dissertation to fulfil the requirements of the MSc. The research topic is determined in consultation with the supervisor and head of department and the research project must be approved according to Faculty guidelines. Before or together with the mini-dissertation, a student must submit at least one draft article for publication in an acknowledged journal to the Faculty Administration, failing which the degree will not be conferred. The draft article must be based on the research for the mini-dissertation and must be acceptable to the supervisor and meet subsidy requirements.