

# University of Pretoria Yearbook 2023

## MSc (Veterinary Tropical Diseases) *Global One Health* (Coursework) (08251032)

**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's 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 805, OHB 810, EPL 801 and VRM 815). Three modules to be taken in the first semester of the first year and the fourth module to be taken during the second semester of the first year.
- Elective modules: Elect modules to the value of 35 credits from the list of elective modules below, and ensure that the following rules are adhered to:
  1. **Choose one module from the following skills-based modules:** ASR 813, AVB 820, AVH 815, AVV 820, EPL 803, EPL 804, TCK 815 and VMB 820.
  2. **Choose two modules from the following list of theory-based modules:** AHE 814, AHE 815, AHE 816, AHE 820, GVD 815, OHB 812, OHB 815, OHB 816 and TBD 815.
- Mini-dissertation (90 credits).

### Admission requirements

1. BVSc (or equivalent) degree **or** relevant four-year BScAgric degree **or** relevant BSc honours degree **or** relevant postgraduate diploma (on NQF level 8)
2. An admissions examination may be required
3. The candidate may be required to submit proof of two years' professional experience in their selected field of study

### 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 emphasised 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:

1. The student should show the ability to undertake a research project and write up the project.
2. The student does not need to make an original contribution to science, but still show the ability to do research.
3. 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:

1. A student that fails two or more core modules (AHE 805, OHB 810, EPL 802 and VRM 815) during the first semester of year 1, will not be allowed to continue in the MSc programme.
2. 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 cosupervisor(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.

1. 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.

2. A coursework master's degree is not deemed to be completed if the electronic version of the minidissertation 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.
3. 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.

## General information

### **University of Pretoria Programme Qualification Mix (PQM) verification project**

*The higher education sector has undergone an extensive alignment to the Higher Education Qualification Sub-Framework (HEQF) across all institutions in South Africa. In order to comply with the HEQSF, all institutions are legally required to participate in a national initiative led by regulatory bodies such as the Department of Higher Education and Training (DHET), the Council on Higher Education (CHE), and the South African Qualifications Authority (SAQA). The University of Pretoria is presently engaged in an ongoing effort to align its qualifications and programmes with the HEQSF criteria. Current and prospective students should take note that changes to UP qualification and programme names, may occur as a result of the HEQSF initiative. Students are advised to contact their faculties if they have any questions.*

## Curriculum: Year 1

Induction: A two-week orientation at DVTB and Hans Hoheisen. Will include sessions on key computing, library, study and research skills. Aspects of the Research Methodology and Introduction to One Health (2 of the 4 ECTS) modules will also be presented (face-to-face) during this time.

Elective modules: Choose modules to the minimum value of 35 credits from the list of elective modules below ensuring that the following is adhered to:

Theory-based elective modules:

Choose two modules from the following list of theory-based modules: AHE 812, AHE 813, AHE 814, AHE 815, AHE 816, EPL 803, GVD 815, OHB 815, OHB 816 and TBD 815.

Skills-based elective modules:

In consultation with the HED and study leader, a maximum of two skills-based elective modules may be selected from the following: ASR 813, AVB 820, AVH 815, AVV 820, EPL 804, TCK 815 and VMB 820.

## Core modules

### Introduction to zoonosis 805 (AHE 805)

<b>Module credits</b>	15.00
<b>NQF Level</b>	09
<b>Prerequisites</b>	No prerequisites.
<b>Language of tuition</b>	Module is presented in English
<b>Department</b>	Veterinary Tropical Diseases
<b>Period of presentation</b>	Semester 2

#### Module content

This module deals with basic concepts and principles of zoonoses with a clear focus on wildlife/livestock/human interactions. Key drivers, contributing underlying factors as well as impacts of zoonoses will be investigated against the background of socio-economic determinants, the environment, animal husbandry practices; integrated intervention tools and strategies; integrated medical and veterinary data collection, cultural perceptions and advocacy and policy development.

### Basic epidemiology 801 (EPL 801)

<b>Module credits</b>	12.00
<b>NQF Level</b>	09
<b>Prerequisites</b>	No prerequisites.
<b>Language of tuition</b>	Module is presented in English
<b>Department</b>	Veterinary Tropical Diseases
<b>Period of presentation</b>	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.

## Introduction to One Health 810 (OHB 810)

<b>Module credits</b>	18.00
<b>NQF Level</b>	09
<b>Prerequisites</b>	No prerequisites.
<b>Language of tuition</b>	Module is presented in English
<b>Department</b>	Veterinary Tropical Diseases
<b>Period of presentation</b>	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.

## Research methodology 815 (VRM 815)

<b>Module credits</b>	10.00
<b>NQF Level</b>	09
<b>Prerequisites</b>	No prerequisites.
<b>Language of tuition</b>	Module is presented in English
<b>Department</b>	Veterinary Tropical Diseases
<b>Period of presentation</b>	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.

## Elective modules

### Advanced One Health: policy 815 (AHE 815)

<b>Module credits</b>	12.00
<b>NQF Level</b>	09
<b>Prerequisites</b>	No prerequisites.
<b>Language of tuition</b>	Module is presented in English
<b>Department</b>	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.

## Laboratory diagnostics 820 (AHE 820)

**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

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.

## Surveillance and survey methodology 822 (AHE 822)

**Module credits** 10.00

**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 813 (ASR 813)

**Module credits** 10.00



<b>NQF Level</b>	09
<b>Prerequisites</b>	No prerequisites.
<b>Contact time</b>	8 web-based periods per week
<b>Language of tuition</b>	Module is presented in English
<b>Department</b>	Veterinary Tropical Diseases
<b>Period of presentation</b>	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 bacteriology 820 (AVB 820)

<b>Module credits</b>	10.00
<b>NQF Level</b>	09
<b>Prerequisites</b>	No prerequisites.
<b>Language of tuition</b>	Module is presented in English
<b>Department</b>	Veterinary Tropical Diseases
<b>Period of presentation</b>	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 helminthology 815 (AVH 815)

<b>Module credits</b>	12.00
<b>NQF Level</b>	09
<b>Prerequisites</b>	No prerequisites.
<b>Language of tuition</b>	Module is presented in English
<b>Department</b>	Veterinary Tropical Diseases
<b>Period of presentation</b>	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 virology 820 (AVV 820)

**Module credits** 10.00

**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 815 (GVD 815)

<b>Module credits</b>	12.00
<b>NQF Level</b>	09
<b>Prerequisites</b>	No prerequisites.
<b>Language of tuition</b>	Module is presented in English
<b>Department</b>	Veterinary Tropical Diseases
<b>Period of presentation</b>	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.

## Globalisation and health 812 (OHB 812)

<b>Module credits</b>	15.00
<b>NQF Level</b>	09
<b>Prerequisites</b>	No prerequisites.
<b>Language of tuition</b>	Module is presented in English
<b>Department</b>	Veterinary Tropical Diseases
<b>Period of presentation</b>	Quarter 2

## Module content

The module is organised in 3 learning blocks including an assessment at the end of the 3rd week. In the first block 'Introduction to the globalisation and health nexus', students will be familiarised with practical and theoretical debates about processes of globalisation, the global political economy, power and how these processes impact on health and people's access to health services in very different settings. In the second block 'Global health governance and its paradigms' we examine in detail the respective approaches, actors and their interrelations that are most prominent in global health policy and cooperation. These approaches (paradigms) include trade; security, economic development; public health; humanitarian aid and poverty reduction; human rights and equity; planetary boundaries and climate change. In the second and third block 'Persistent problems, new challenges' we will focus on specific case studies such as, commercial determinants of NCD's, health workforce migration; the adaptation in communities to innovation and the introduction of modern diagnostics; urban health and environmental pollution; different perspective on sexual and reproductive health rights. Deconstructing the different paradigms, learning from the different case-studies will deepen the understanding of the globalisation and health nexus, including pathways, the governance and actions to overcome/tackle them. The role of (global) civil society and local actors in reducing global health equity will also be discussed.

## Outbreak investigations and research 815 (OHB 815)

<b>Module credits</b>	15.00
<b>NQF Level</b>	09
<b>Prerequisites</b>	No prerequisites.
<b>Language of tuition</b>	Module is presented in English
<b>Department</b>	Veterinary Tropical Diseases
<b>Period of presentation</b>	Semester 2

### Module content

A set of interdisciplinary sessions will assist the students to gain new insights in outbreak investigation and research which can support outbreak control.

In the first part of the module, emphasis will be on introducing the different theoretical and operational concepts, using exercises to practice hands-on skills, such as

- 10 steps of outbreak investigation
- surveillance and early warning
- geographical information systems
- involving stakeholders, communities, health systems
- evaluation methods, data management
- ethics

In the second part, we will go more in depth by unravelling research opportunities and discussing the challenges, the specificities and impact of investigations and research during outbreaks through disease-specific examples. We will discuss infectious disease outbreaks of rare pathogens (e.g. Ebola), often neglected outbreaks (e.g. Cholera), nosocomial outbreaks (e.g. Antimicrobial resistance -related), vector-borne disease outbreaks (e.g. Chikungunya), as well as discuss Covid-19 related investigations and research. In all examples we will focus on multi- and interdisciplinarity in outbreak investigation, control and research.

## Molecular data for infectious diseases 816 (OHB 816)

<b>Module credits</b>	15.00
<b>NQF Level</b>	09
<b>Prerequisites</b>	No prerequisites.
<b>Language of tuition</b>	Module is presented in English
<b>Department</b>	Veterinary Tropical Diseases
<b>Period of presentation</b>	Semester 2

## Module content

MID is a module for molecular biologists on the implementation of molecular techniques, and more specifically the use of molecular data in tropical lowresource settings. In MID, molecular techniques and data are discussed in the context of clinical and epidemiological field studies on infectious diseases.

Pathogen and vector identity, dynamics, and transmission often form an integral part of such studies. These phenomena can be documented using DNA and RNA techniques. Despite rapid advancements in molecular methods, their implementation in low-resource environments often remains cumbersome due to logistic, financial, and human resource constraints. MID focusses on the selection and analysis of appropriate assays and their implementation in a particular research setting.

Participants work in small groups to critically discuss peer-reviewed papers and to develop their own protocol and implementation plan. The focus of the module is to select and validate an appropriate molecular method in the study context, and to implement that method in the given setting for optimal qualitative data acquisition and analysis.

## Selected tick identification 815 (TCK 815)

<b>Module credits</b>	10.00
<b>NQF Level</b>	09
<b>Prerequisites</b>	No prerequisites.
<b>Language of tuition</b>	Module is presented in English
<b>Department</b>	Veterinary Tropical Diseases
<b>Period of presentation</b>	Semester 2

## Module content

Skills training

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 820 (VMB 820)

<b>Module credits</b>	10.00
<b>NQF Level</b>	09
<b>Prerequisites</b>	No prerequisites.
<b>Language of tuition</b>	Module is presented in English
<b>Department</b>	Veterinary Tropical Diseases
<b>Period of presentation</b>	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)

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

#### Regulations and rules

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.

#### University of Pretoria Programme Qualification Mix (PQM) verification project

The higher education sector has undergone an extensive alignment to the Higher Education Qualification Sub-Framework (HEQF) across all institutions in South Africa. In order to comply with the HEQSF, all institutions are legally required to participate in a national initiative led by regulatory bodies such as the Department of Higher Education and Training (DHET), the Council on Higher Education (CHE), and the South African Qualifications Authority (SAQA). The University of Pretoria is presently engaged in an ongoing effort to align its qualifications

and programmes with the HEQSF criteria. Current and prospective students should take note that changes to UP qualification and programme names, may occur as a result of the HEQSF initiative. Students are advised to contact their faculties if they have any questions.