



**INSTITUTE**  
**OF TROPICAL**  
**MEDICINE**  
**ANTWERP**

# Master of Science in Tropical Medicine (MTM)

BIOMEDICAL OR CLINICAL SCIENCES ORIENTATION

Prof Dr Lut Lynen, Head of Clinical Sciences Department



# Master of science in Tropical Medicine

## ■ Where do we come from?

### ■ Historically at ITM:

- Master in Tropical Animal Health (MsTAH)
- Master in Public Health (MPH)
  - Health Systems (HSMP) and Disease Control (DC)
  - Recently, International Health (IH)

### ■ Increased need: extra-qualification for clinical and biomedical profiles

### ■ MTM Proposal March '19; initial accreditation by NVAO in December 2019



#### BESLUIT TOETS NIEUWE OPLEIDING

De NVAO besluit dat:

**MASTER OF SCIENCE IN TROPICAL MEDICINE**

aangeboden door

**Institute of Tropical Medicine**

voldoende generieke kwaliteitswaarborgen biedt om het diploma van master aan te bieden.

Het betreft een opleiding van 60 studiepunten aangeboden te Antwerpen met de volgende afstudeerrichtingen: Clinical Sciences; Biomedical Sciences.

De NVAO komt tot dit besluit op basis van het oordeel voldoende van de visitatiecommissie ingesteld door de NVAO. Het adviesrapport opgesteld door deze visitatiecommissie maakt integraal deel uit van dit besluit.

De NVAO neemt dit besluit met toepassing van de Codex Hoger Onderwijs, in het bijzonder Art. II. 153, en op basis van de bevindingen en overwegingen opgenomen in het adviesrapport.

Den Haag, 2 december 2019

Dirk Broos, voorzitter



# Audience

- The MTM wants to deliver two different groups of graduated students:
  - Clinical or biomedical *professionals* who are trained to work in reference labs, research/academic institutions, and in the sector of field actors involved in **health care** in the Global South
  - Clinical or biomedical *scientists* who want to conduct **fundamental, applied or operational research** in academic, research or reference institutions

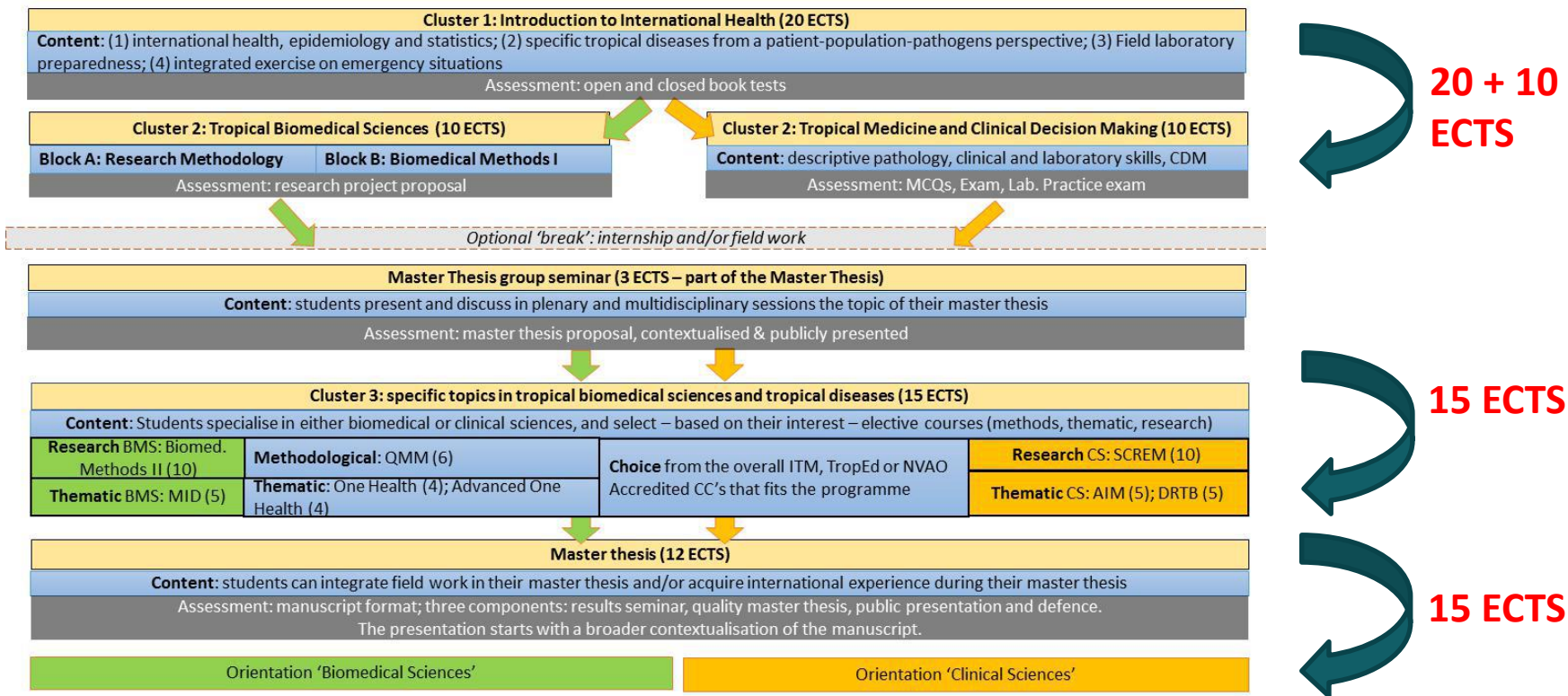
## Targeted audience

- Master of Science in Medicine
- Master of Science in Epidemiology
- Master of Science in Global Health
- Master of Science in Pharmacy or Drug Development
- Master of Science in (Molecular) Biology
- Master of Science in Bio-informatics
- Master of Science in engineering: Biomedical Technology
- Master of Science in Biomedical Sciences or Biomed. Engineering
- Master of Science in Bioscience Engineering: Human Health Engineering

*-Any comparable degree is in fact eligible*

*-Selection and admission procedure: work experience is not required*

# Programme structure



1-5 years, 60 ECTS



# 1. Introduction to International Health (IIH, 20 ECTS)

Week			
1	Introduction		
2			
3			
4			
5			
6	Vector Borne Diseases		
7			
8	HIV/Aids		
9	Bacteria & Antimicrobial Resistance		
10	Integrated Tuberculosis Care		
11	Public Health		Field lab preparedness
12	Child Health		Field lab preparedness
13	Reproductive and maternal health		Field lab preparedness
14	Integrated exercise on emergency situations		
15	Synthesis		
	Exams		
16	Exams		

## 2. Biomed orientation

### Tropical Biomedical Sciences (10 ECTS)

- Block A: Research Methodology
- Block B: Biomedical Methods 1

## 2. Clinical orientation

### Tropical Medicine and Clinical Decision Making (10 ECTS)

- Descriptive pathology
- Clinical and laboratory skills
- Clinical Decision Making (CDM)



# 3. Advanced Modules

Short courses

**Containment of Antibiotic Resistance (AIM) 5 ECTS**

**Biomedical Methods II (BMM) 10 ECTS**

**Clinical Research & EBM (SCREM) + Fundamentals of Clinical Studies (GCP) 9+1= 10 ECTS**

**Qualitative & Mixed Methods in International Health Research (QMM) 6 ECTS**

**Drug-resistant TB (DR-TB) 5 ECTS**

**Molecular data for Infectious Diseases (MID) 5 ECTS**

**Advanced One Health (AHE) 4 ECTS**

**Other ITM or NVAO accredited course**





# Clinical Research & EBM (SCREM)



## One health module (AHE)



# Outbreak Investigations and Research (OIR)



## 4. Master Thesis (3 + 12= 15 ECTS)

### Master thesis Group seminar

Students present and discuss in plenary and multidisciplinary session the topic of their master thesis, in a poster format.

- Assessment: master thesis proposal, contextualised & publicly presented.

### Master thesis

Students can integrate field work in their master thesis and acquire international experience.

- Assessment: manuscript format; 3 components: results of seminar, quality master thesis, public presentation and defence. The presentation starts with a broader contextualisation of the manuscript.



## Suggested Thesis Topics Biomedical Orientation Academic Year 2020-21

- **Virology Unit:**
  - o Arbovirus sylvatic reservoirs in Africa
  - o Chikungunya virus-host protein interactions
- **Veterinary Protozoology Unit:**
  - o MicroRNAs in tsetse fly saliva and their possible role in vector-host-trypanosome interactions
  - o Tsetse fly salivary proteins and their possible role in vector-host-trypanosome interactions"
- **Entomology Unit:** Malaria and dengue co-burden along a village-to-forest gradient in Cambodia
- **Molecular Parasitology Unit:** Improvement of methods for direct whole genome sequencing of Leishmania in clinical samples (blend of bench work and bio-informatics)
- **Mycobacteriology Unit:** Innovations in tuberculosis drug resistance testing
- **Medical Helminthology Unit:**
  - o Diagnostics for post-treatment monitoring of schistosomiasis
  - o Epidemiology of polyparasitism and implications for control
  - o Interactions between parasite infection and malnutrition
  - o Systematic review on schistosomiasis co-infections
- **Malaria Unit:**
  - o Validation of assays and markers specifically designed for molecular surveillance of *P. falciparum* and *P. vivax* in Peru and/or Vietnam. This will be done with samples collected through our collaborative projects over the years with our partners in the South, including ongoing collections
  - o Developing and validating prediction models for geographic origin or parasite lineages in order to track parasite (sub-)populations
  - o Investigate the effect of changing epidemiology and interventions/policy on parasite populations
- **Veterinary Helminthology Unit:**
  - o Transmission of *Fasciola* spp. in northern Vietnam
  - o Transmission factors of *Fasciola*: a systematic review
  - o The epidemiology of swimmer's itch in Belgian lakes
  - o The animal reservoir of *Schistosoma japonicum* in the Philippines (topic shared with medical helminthology)
  - o Systematic review on Scromboid disease
  - o The Vicious Worm – Can the *Taenia solium* health education tool be used among professionals in Rwanda?
  - o Evaluating One Health - CYSTISTOP case study
  - o Is the Vicious worm effective in changing children's risky behaviours?
  - o Foodborne parasites: what do we know about and what are our attitudes and practices towards these? – A population-based study in Belgium



# MTM - Selection criteria

- 20 students can be admitted to the programme (10 students x orientation)
  - Curriculum Vitae
  - Previous academic performance: degree and obtained results
  - Motivation
  - The provisional study plan, including a master thesis topic
  - References

*The MTM selection committee will take into account the diversity (nationality, experience, background, gender) of the student group, to maximize the interdisciplinarity and the potential for peer learning*



First MTM graduation:  
September 2021



Application period:  
January - February 2020

## STUDENT LIFECYCLE MTM

Full-/part-time  
MTM:  
starts September 2020



Max 20 students (10+10/dept)



Selection, including  
Skype interviews:  
March 2020  
(end May DGD approval)

# Who is who and price?

- Course directors: Lut Lynen & Jean-Claude Dujardin
- Coordination: Maria Zolfo & Mieke Stevens
- Education Office: Bruno Broucker
- Course secretariat: Jasmien Adamas + Nadia Ehlinger
- [MTM@itg.be](mailto:MTM@itg.be)
- 16.500 EUR non-EEA students; 5.460 EUR EEA students





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