

# MSc Microbiology – A519

## 1. Objectives

The areas of emerging Science & Technology and innovative Research & Development are increasingly acknowledged as important and necessary to increase our nation's competitiveness in global markets, prosperity and quality of life. There is a particularly growing need to channel human resources in the field of life sciences and enhance competencies in this discipline. Microbiology is an important and wide-ranging field of study within the life sciences, covering a range of subjects that are relevant to human health and disease as well as food, industrial and biotechnological applications. It is a subject that includes traditional aspects such as the laboratory culture and isolation of specific microbes alongside more contemporary aspects, including molecular biology and bioinformatics.

This programme will enable those with a first degree in Microbiology or an allied field to build on, update or further their studies and enhance their knowledge and skills in this discipline. This degree is suited, albeit not exclusively, for those employed by the industry, testing laboratories, research institutions and medical establishments or for those working as laboratory technicians or research assistants in academic or private laboratories.

Graduates from the programme will be able to avail themselves of diverse career opportunities in research and development, quality assurance or food safety and hygiene in the food industry, research institutions, medical establishments or academic institutions. In addition many graduates may progress to a PhD study and eventually to a research or academic career related to microbiology.

### **On completion of this programme, learners will be able to:**

- Gain an advanced theoretical education and practical training in the area of microbiology;
- Familiarise themselves with current laboratory practice in microbiology;
- Gain basic and advanced knowledge of the biology, pathogenesis and epidemiology of important infections;
- Gain an understanding of how these infections are diagnosed and treated;
- Get an insight of the recent advances in microbiology;
- Gain an understanding of the patterns of disease incidence, prevalence, distribution and control and associated morbidity and mortality rates;
- Become cognizant of the important steps to carrying out an outbreak investigation;
- Engage in microbiological risk analysis;
- Familiarise with the traditional and rapid methods for tracking of microorganisms for surveillance purposes;
- Develop the ability to integrate knowledge acquired across functional areas of microbiology and formulate appropriate judgments on scientific research;
- Apply knowledge, understanding and problem-solving skills to practical issues through case studies and real problems;
- Acquire relevant transferable skills including: analytical; interpretation and presentation; time management and organisation; effective verbal and written communication skills and creative thinking.
- Develop their critical and analytical skills so that they may identify problems, formulate hypotheses, design experiments, acquire and interpret data, and draw conclusions.

## 2. General Entry Requirements

- At least a Second Class degree or a CPA  $\geq 50\%$ , whichever is applicable or
- A GPA not less than 2.50 out of 4 or equivalent from a recognised University,

OR alternative qualifications acceptable to the University of Mauritius.

## 3. Programme Requirements

A degree in Microbiology or other allied life sciences.

## 4. General and Programme Requirements – Special Cases

The following may be deemed to have satisfied the General and Programme requirements for admission:

- (i) Applicants who do not satisfy any of the requirements as per Regulations 2 and 3 above but submit satisfactory evidence of having passed examinations which are deemed by the Senate to be equivalent to any of those listed.
- (ii) Applicants who do not satisfy any of the requirements as per Regulations 2 and 3 above but who in the opinion of Senate, submit satisfactory evidence of the capacity and attainments requisite to enable them to pursue the programme proposed.

## 5. Programme Duration

	Normal [Year(s)]	Maximum [Years]
Master's Degree (PT):	2	4
Postgraduate Diploma (PT):	2	4
Postgraduate Certificate (PT):	1	2

## 6. Credits per Year: Minimum 12 credits subject to Regulation 5.

## 7. Minimum Credits Required for the Award of

Master's Degree:	38
Postgraduate Diploma:	26
Postgraduate Certificate	14

Breakdown as follows:

	Core Taught Modules	Project
Master's Degree:	26 credits	12 credits
Postgraduate Diploma:	26 credits	
Postgraduate Certificate:	14 credits	

## 8. Assessment

Each module will carry 100 marks and will be assessed as follows (unless otherwise specified):

Assessment will be based on written examination of 2 or 3-hour duration for all modules, carrying a weighting of 70%, and continuous assessment carrying 30% of total marks. Continuous assessment will be based on case studies; Problem-Based Learning, visits, student-led seminars, and literature based research and/or assignments, **and should include at least 1 class test.**

For a student to pass a module, an overall total of 40% for combined continuous assessment and written examination components would be required to pass the module, without minimum thresholds within the individual continuous assessment and written examination.

There will be a compulsory class test for the module taught over a semester at the end of the semester of the given academic year. Written examinations for all the modules, whether taught over one semester or one academic year, will be carried out at the end of the year.

#### **Submission Deadlines for Dissertation:**

- First Draft: By last week day of July of the Academic Year
- Final Copy: Three copies of the dissertation (two spiral-bound copies and one soft copy in a single PDF text file on electronic storage media) should be submitted to the Faculty/Centre Registry and **in addition, a soft copy of the dissertation in a single PDF text file should be uploaded on the “Turnitin Platform”, in the final assignment submission link indicated by the Programme/Project Coordinator.** All of the above should be submitted not later than the last week day of August by 4.00 p.m. at latest.

## **9. List of Modules**

### **CORE MODULES**

<b>Code</b>	<b>Module Name</b>	<b>Hrs/Yr</b>	<b>Credits</b>
		<b>L+P</b>	
AGRI 6090Y(1)	Laboratory Methods in Microbiology	45 + 60	5
AGRI 6091Y(1)	Molecular Microbiology and Genetics	45 + 30	4
AGRI 6092Y(1)	Epidemiology and Public Health Surveillance	60 + 45	5
AGRI 6093Y(1)	Biostatistics and Bioinformatics	45 + 45	4
AGRI 6094Y(1)	Advanced Food and Industrial Microbiology	45 + 45	4
AGRI 6095Y(1)	Medical and Pharmaceutical Microbiology	45 + 45	4
AGRI 6000Y(1)	Project		12

## 10. Programme Plan

### Part-Time:

#### YEAR 1

<b>Code</b>	<b>Module Name</b>	<b>Hrs/Yr</b>	<b>Credits</b>
		<b>L+P</b>	
AGRI 6090Y(1)	Laboratory Methods in Microbiology	45 + 60	5
AGRI 6091Y(1)	Molecular Microbiology and Genetics	45 + 30	4
AGRI 6092Y(1)	Epidemiology and Public Health Surveillance	60 + 45	5
AGRI 6093Y(1)	Biostatistics and Bioinformatics	45 + 45	4

#### YEAR 2

<b>Code</b>	<b>Module Name</b>	<b>Hrs/Yr</b>	<b>Credits</b>
		<b>L+P</b>	
AGRI 6094Y(1)	Advanced Food and Industrial Microbiology	45 + 45	4
AGRI 6095Y(1)	Medical and Pharmaceutical Microbiology	45 + 45	4
AGRI 6000Y(1)	Project		12

**Total no. of credits: 38**