

BSc (Hons) Agricultural Science and Technology (Minor: Biosecurity) (Full-Time) A336

1. Objectives

The changing socio-economic pattern of Mauritius has led to an increasing demand for agricultural produce of good quality. Agricultural production is now increasingly being characterised by the use of modern technology. It is the Government policy and vision for the future to adopt a technology-based approach to render the local agricultural sector more productive, resource-efficient, service-oriented, sustainable and competitive whilst responding to the environmental and ethical standards demanded by society.

The further development of agriculture and its related industries is challenging and requires appropriate knowledge, skills and competences to keep pace with the latest technological developments in that sector. This has led to the need for well-trained agricultural scientists who have the technical and practical skills in addition to in-depth scientific knowledge to meet these new challenges facing the Mauritian agriculture as well as for those interested in embarking on postgraduate studies. However, with increasing global trade, movement of people, threat of global pandemics, and global climate change, the potential for the introduction of pests and diseases in Mauritius is increasing in spite of existing quarantine measures and disease surveillance programmes in place. In the same vein, it is also increasingly crucial that emphasis is placed on good agricultural practices and hygienic practices at primary production level to minimise outbreaks of hazards, and at the same time to produce quality and safe foods. Thus the dimension of biosecurity is increasingly becoming important. This could represent an important threat to the agricultural sector and ultimately to our local food security. We thus need trained human resources to analyse and manage risks posed by plant and animal pests and diseases (e.g. Avian Flu), the introduction of invasive alien species (e.g. weeds) and the introduction and release of GMOs and their products, and manage response activities in the most effective way in the wake of a biosecurity threat.

The programme is structured towards the acquisition of scientific skills and practical knowledge in agricultural science and production in combination with an understanding of the science and regulation of biosecurity. In addition, students are exposed with the knowledge and application of concepts, tools and techniques in the management of small and medium agribusinesses.

By the end of this programme, graduates will have developed knowledge, abilities and skills to:

- Apply the scientific, economic, environmental and business principles underpinning agricultural productivity, production and biosecurity,
- Identify and evaluate appropriate agricultural techniques in the crop and animal sectors to enhance efficiency of production and secure long-term food security,
- Evaluate the wider consequences of agricultural activities on the environment and promote sustainable agricultural practices,
- Transfer relevant knowledge, skills and technological concepts to the producers and to support innovation,
- Design, plan and carry out research in the various fields of agriculture,
- Manage agricultural enterprises and identify new ventures in the agricultural sector;
- Use appropriate scientific and statistical methods and evaluations for decision making in various sectors of agriculture,
- Identify and categorise risks, challenges, and solutions in the food system for food safety, and biosecurity in the food production continuum,
- Conduct a biosecurity risk assessment for an agricultural enterprise (e.g., poultry production),
- Devise a biosecurity checklist and a risk management plan for improving biosecurity in an agricultural enterprise,
- Demonstrate use of written and oral communication skills,
- Demonstrate conceptual skills - researching, collecting and organising information, problem solving, planning and organising, innovation and creativity, systems thinking and self-reliance.

2. General Entry Requirements

In accordance with General Entry Requirements for Admission to the University for Undergraduate Degrees.

3. Programme Requirements

SC: Credit in Mathematics and Chemistry / Biology.

At least 2 GCE 'A' Level passes in related approved Science subjects (Mathematics, Physics, Chemistry, Biology, Food Studies, Botany, Zoology, Environmental Studies, and other allied science subjects).

4. Programme Duration

	Normal (Years)	Maximum (Years)
Degree	3	5

5. **Credits per Year:** Minimum 18 credits, Maximum 48 credits subject to Regulation 6.

6. **Minimum Credits Required for Award of Undergraduate Degree: 104 credits**

Breakdown as follows:

Degree	Credits from	
	Taught Modules	Project
	Core	
	95	9

Students may exit with:

- Certificate after having earned 30 credits in core modules.
- Diploma after having earned 60 credits in core modules.

7. Assessment

Each module will be assessed over 100 marks (i.e. expressed as %) with details as follows (unless otherwise specified).

Assessment will be based on a Written Examination of 2-3 hour duration, carrying a weighting of 70 %, and Continuous Assessment carrying 30 % of total marks for AGRI modules. Continuous Assessment will be based on laboratory/field works, and/or assignments, and should include at least 1 class test. Written Examinations for all AGRI modules will normally be carried out at the end of the academic year. An overall total of 40 % for combined Continuous Assessment and Written Examination would be required to pass a module, without minimum thresholds within the individual Continuous Assessment and Written Examination.

Assessment of the module AGRI 2000 - Practical Training will be based on the On-site Supervisor's Evaluation and the Student's Portfolio. For satisfactory completion of the Practical Training, a minimum of 40% should be attained. Assessment of the module AGRI 1153(1) - Effective Scientific Communication: Principles and Practice I will be based on the submission of a portfolio. For the part on WEB 2.0 tools, participation in all discussion forum on the MOODLE platform and demonstration of the use of the tools (e.g. creation of a blog) should be shown. Assessment of the module AGRI 2279(1) - Scientific Communication: Principles and Practice II, will be based on the submission of a Portfolio. Assessment of the module WCS 2200(3) – Writing Case Studies, will be based on the write up and submission of a Case Study and Oral Presentation.

All students should keep a portfolio of all coursework for their respective Programme of studies and same should be made available upon request, to the Faculty/Centre Examination Office. In case students fail to submit the Portfolio to the External Examiners through the Faculty/Centre Examination Office, a penalty of 10% on all Continuous Assessment marks obtained shall apply.

Modules will carry the weightings of 1, 3 or 5 depending on their status (Introductory, Intermediate or Advanced). Weighting for a particular module is indicated within parentheses in the module code. Each module will carry credits in the range of 1 to 6. Project – AGRI 3000Y(5) carries 9 credits. The modules: AGRI 1153(1) - Effective Scientific Communication: Principles and Practice I and AGRI 2279(1) - Scientific Communication: Principles and Practice II, carry 2 credits and 1 credit respectively.

Submission Deadlines for Dissertation

- First Draft: by last week day of February of the Academic Year.
- Final Copy – not later than the last week day of March of the Academic Year:
- Three copies of the dissertation (two spiral-bound copies, printed on both sides in black and white and one soft copy in a single PDF text file on electronic storage media) should be submitted to the Faculty/Centre Registry.
- In addition a soft copy of the dissertation (main body i.e, Introduction up to the last Chapter) should be uploaded on the Turnitin Platform, as a single PDF file in the appropriate class/assignment provided by the Project Supervisor by **3.00 p.m.** In case a student is allocated a Part-Time Supervisor, the class is to be created by the Programme/Project Coordinator.
- All of the above should be submitted not later than the working day (i.e. excluding Saturdays, Sundays and Public Holidays) of March of the academic year by 4.00 pm at latest unless specified otherwise in the Programme of studies.
- Failure to submit the Project/Dissertation through the Turnitin Platform will result in the dissertation of the student, whether the bound copy or the soft copy, being unreceivable.

8. List of Modules

CORE MODULES

<u>Code</u>	<u>Module Name</u>	Hr / Yr	Credits
		L+P	
AGRI 1018Y(1)	Agricultural Chemistry and Soil Science	45+60	5
AGRI 1034Y(1)	Animal Production: Principles and Techniques	30+30	3
AGRI 1035Y(1)	Agronomy and Horticultural Crop Production I	45+60	5
AGRI 1064Y(1)	Agrometeorology and Climate Change	45+0	3
AGRI 1071Y(1)	Data Handling and Research Methodology	30+30	3
AGRI 1073Y(1)	Botany and Plant Physiology	60+45	5
AGRI 1135Y(1)	Agricultural and Food Economics and Management	45+0	3
AGRI 10110Y(1)	Microbiology	30+30	3
AGRI 10111Y(1)	Principles of Genetics	30+30	3
AGRI 10112Y(1)	Introduction to Biosecurity	30+0	2
AGRI 1153(1)	Effective Scientific Communication: Principles and Practice I	30+0	2
AGRI 2088Y(3)	Biochemistry and Biotechnology	60+60	6
AGRI 2112Y(3)	Experimental Designs and Sampling Techniques	30+30	3
AGRI 2118Y(3)	Science and Technology of Foods	45+30	4
AGRI 2156Y(3)	Agricultural Engineering Principles	60+45	5
AGRI 2158Y(3)	Agricultural Management and Extension	45+0	3
AGRI 20112Y(3)	Animal Science	45+30	4
AGRI 20113Y(3)	Plant Pests, Diseases and Weeds	45+45	4
AGRI 20114Y(3)	Biosecurity Legislation and Regulatory Framework	45+0	3
AGRI 2279(1)	Effective Scientific Communication: Principles and Practice II	15+0	1

WCS 2200(3)	Writing Case Studies (Year 2 Semester 2)	9+36	3
AGRI 2000	Practical Training	6-8 wk	-
AGRI 3000Y(5)	Project	-	9
AGRI 3026Y(5)	Crop Production Technologies	60+45	5
AGRI 30108Y(5)	Sustainable Animal and Health Management Practices	60+30	5
AGRI 30109Y(5)	Farm Animal Biosecurity	45+0	3
AGRI 30110Y(5)	Plant Biosecurity	45+0	3
AGRI 30111Y(5)	Biosecurity Risk Assessment	45+0	3
AGRI 30112Y(5)	Food Safety and Biosecurity	45+0	3

Total Number of Credits = 104 credits

9. Programme Plan: BSc (Hons) Agricultural Science and Technology (Minor: Biosecurity)

YEAR 1

CORE MODULES

Code	Module Name	Hr / Yr	Credits
		L+P	
AGRI 1018Y(1)	Agricultural Chemistry and Soil Science	45+60	5
AGRI 1034Y(1)	Animal Production: Principles and Techniques	30+30	3
AGRI 1035Y(1)	Agronomy and Horticultural Crop Production I	45+60	5
AGRI 1064Y(1)	Agrometeorology and Climate Change	45+0	3
AGRI 1071Y(1)	Data Handling and Research Methodology	30+30	3
AGRI 1073Y(1)	Botany and Plant Physiology	60+45	5
AGRI 1135Y(1)	Agricultural and Food Economics and Management	45+0	3
AGRI 10110Y(1)	Microbiology	30+30	3
AGRI 10111Y(1)	Principles of Genetics	30+30	3
AGRI 10112Y(1)	Introduction to Biosecurity	30+0	2
AGRI 1153(1)	Effective Scientific Communication: Principles and Practice I	30+0	2
Total		420+285	37

YEAR 2

CORE MODULES

Code	Module Name	Hr / Yr	Credits
		L+P	
AGRI 2088Y(3)	Biochemistry and Biotechnology	60+60	6
AGRI 2112Y(3)	Experimental Designs and Sampling Techniques	30+30	3
AGRI 2118Y(3)	Science and Technology of Foods	45+30	4
AGRI 2156Y(3)	Agricultural Engineering Principles	60+45	5
AGRI 2158Y(3)	Agricultural Management and Extension	45+0	3
AGRI 20112Y(3)	Animal Science	45+30	4
AGRI 20113Y(3)	Plant Pests, Diseases and Weeds	45+45	4
AGRI 20114Y(3)	Biosecurity Legislation and Regulatory Framework	45+0	3
AGRI 2279(1)	Effective Scientific Communication: Principles and Practice II	15+0	1
WCS 2200(3)	Writing Case Studies*	9+36	3
AGRI 2000	Practical Training*	6-8 wk	-
Total		435+240	36

* AGRI 2000- Practical Training will be undertaken at the end of Year 2

* WCS 2200(3) - Writing Case Studies will be undertaken in Year 2 Semester 2

YEAR 3**CORE MODULES**

<u>Code</u>	<u>Module Name</u>	<u>Hr / Yr</u>	<u>Credits</u>
		<u>L+P</u>	
AGRI 3000Y(5)	Project	-	9
AGRI 3026Y(5)	Crop Production Technologies	60+45	5
AGRI 30108Y(5)	Sustainable Animal and Health Management Practices	60+30	5
AGRI 30109Y(5)	Farm Animal Biosecurity	45+0	3
AGRI 30110Y(5)	Plant Biosecurity	45+0	3
AGRI 30111Y(5)	Biosecurity Risk Assessment	45+0	3
AGRI 30112Y(5)	Food Safety and Biosecurity	45+0	3
Total		300+75	31