

1. Context and Objectives

Context

The changing socio-economic pattern of Mauritius has led to an increasing demand for agricultural produce of good quality. We have to increase production to keep pace with the consumer ever increasing demand for food and at the same time produce quality and safe foods and to be food secure. 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 without compromising the environmental and ethical standards demanded by society. The further development of agriculture and its related industries is therefore challenging and requires appropriate knowledge, skills and competences to keep pace with the latest technological developments in that sector.

However, with increasing global trade, movement of people, threat of global pandemics, and global climate change, is increasing our exposure to major and ongoing biosecurity threats (e.g., the potential for the introduction of pests and diseases) both in Mauritius and globally. This represents an important risk to the agricultural sector and ultimately to food security. Thus the dimension of biosecurity is increasingly becoming important and a growing field for many professionals involved in agriculture, and has also emerged as a key global issue. A biosecurity system is central to the management of these threats, which involves activities like risk analysis, quarantine and surveillance to stop the entry of exotic organisms and management of pests and diseases. 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 which can pose serious biosecurity risks to the overall economy.

Objectives of the Programme

This programme has been mounted with the twin objectives of developing both the generic and subject specific skills of students. It will help to equip them with the broadest range of technical and practical skills in agricultural science and production to meet the new challenges facing our local and global agriculture. It also aims to familiarize the graduates with the concepts of biosecurity and appreciate its importance in analyzing and managing risks posed by plant and animal pests and diseases (e.g. Foot and Mouth Disease), the introduction of invasive alien species (e.g. weeds). In addition, students are exposed with the knowledge and application of concepts, tools and techniques in the management of small and medium agribusinesses. With regard to the generic skills, students will have the opportunity to acquire qualities and transferable skills such as numeracy, written and oral communication skills, information retrieval and team working skills necessary for employment. This programme offers students the opportunity to undertake 8 weeks placement at the end of the second year, in organizations relevant to their field of study, to gain technical and practical skills in the area of agriculture and biosecurity.

Career Opportunities

After completing this degree, student will be able to pursue careers in field such as agriculture, biosecurity, quarantine management, animal health and pest management in governmental and non-governmental agricultural production departments, providing advice on scientific, technical and economic matters You will be able to act in technical and scientific roles in both the public and private sector organisations related to agricultural and food production. There are opportunities in advisory and management roles in agricultural extension, banking; journalism, consultancy firms, animal feed and fertiliser manufacturers. This programme of study also prepares the students for further training (e.g. postgraduate studies, training workshops) in agriculture related disciplines and biosecurity.

2. Programme Learning Outcomes

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

- demonstrate knowledge of the scientific, economic, environmental and business principles underpinning agricultural production and biosecurity
- apply scientific principles to the management of agricultural problems
- conduct an investigation and solve real world scientific problems in an agricultural farm
- identify and evaluate appropriate agricultural techniques in the crop and animal sectors to improve production and food security
- demonstrate specialized technical, field and laboratory skills in the various discipline of agriculture
- evaluate the wider consequences of agricultural activities on the environment and promote sustainable agricultural practices
- transfer relevant knowledge, skills and technological concepts to a specialist and non specialist audience
- design, plan and carry out a research based project 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 agricultural 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 skills in written and oral scientific communication skills
- demonstrate high standards of ethical conduct and social responsibility in the delivery of their tasks
- develop lifelong personal learning strategies to keep up to date in their career and personal development
- develop team working skills to work collaboratively in practical work, research work
- demonstrate capacity to retrieve and evaluate literature, especially online resources for their research and other tasks.

3. Teaching and Learning Methods

This programme is taught through lectures, tutorials, online activities, laboratory and farm practical classes, farm visits and student-led seminars. It will also include self-study learning (e.g., directed learning, student group work, preparation of reports, case studies) and other learning activities (e.g., self-independent learning individual reading, use of the library, online learning, preparing for exams). All of them are meant to allow the development of the generic and subject specific competences and learning outcomes prescribed for this programme of study.

4. Entry Requirements

General Requirements

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

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).

As per UoM Entry Requirements or any alternate qualifications acceptable to the University Senate.

5. Programme Duration

	Normal (Years)	Maximum (Years)
Degree	3	5

6. Minimum LCCS Credits required for Award of the Degree:-

For Degree Award

A student should have successfully completed a total of **6120 notional learning hours** (204 LCCS Credits), inclusive of the practical training, as per the programme structure to be awarded the degree.

For each Academic Year

Year of Study	Number of LCCS Credits (Notional Learning Hours)
1	74 (2220 Learning Hours)
2	68 (2040 Learning Hours)
3	62 (1860 Learning Hours)
Total	204 (6120 Learning Hours)

- **Minimum 12 LCCS Credits/year subject to Section 5.**
- **Maximum 96 LCCS Credits/subject to Section 5.**

For Exit Award

The student can exit the programme with a Diploma or Certificate, as follows:

- Students may exit with a Diploma in Agricultural Science and Technology after having earned **102 LCCS Credits**.
- Students may exit with a Certificate in Agricultural Science and Technology after having earned **51 LCCS Credits**.

Break down of notional learning hours:

The total notional learning hours (i.e. students' workload) for the 3 year full time programme will be comprised of the following learning activities:

Learning Activity	Notional Learning Hours
Contact Teaching	920
Self-Study	1840
Other Learning	2760
Total	6120

This means that students are expected to work an average of 40 hours per week over a full academic year.

The Academic Year

For each semester of the academic year, the lectures, tutorials, class test, and examinations will be delivered and organized as follows:

Weeks 1 – 5	Lectures/Tutorials/Practical (Formal contact hours))
Week 6	Class-test
Weeks 7 – 11	Lectures/Tutorials/Practical (Formal contact hours))
Week 12	Feedback on assignments and Class Test or any remedial assignment
Week 1	Revision Week prior to examinations
Week 14	Examinations Start

7. Assessment and Deadlines

The achievement of the modules learning outcomes will be assessed through a variety of methods (e.g., exams, class tests, reports, field visits). 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 - 2½ hours duration, carrying a weighting of 60 %, and Continuous Assessment carrying 40% of total marks. Continuous Assessment will be based on Class/Laboratory/Field Visits/Case Studies, and /or Assignments, and should include at least 1 Class Test.

An overall total of 40 % for combined Continuous Assessment and Written Examination components would be required to pass a module, without minimum thresholds within individual Continuous Assessment and Written Examination.

Modules will carry the weightings of 1 or 3 depending on their status (Introductory or Intermediate). Weighting for a particular module is indicated within parentheses in the module code.

Modules will carry LCCS Credits in the range of 4 to 12, except for the dissertation which carries 18 LCCS Credits.

The Practical Training of 8-10 weeks will be undertaken at the end of Year 2 after the Yearly Examinations

8. Programme Plan – BSc (Hons) Agricultural Science and Technology (Minor: Biosecurity) (Full-Time)

<u>Code</u>	<u>Module Name</u>	<u>Teaching Contact Hours</u>	<u>Self-Study Hours</u>	<u>Directed Learning (Hours)</u>	<u>Total Learning Hours</u>	<u>LCCS Credits</u>
AGRI 10141Y(1)	Agricultural Chemistry and Soil Science	50	100	150	300	10
AGRI 10142Y(1)	Animal Production: Principles and Techniques	30	60	90	180	6
AGRI 10143Y(1)	Agronomy and Horticultural Crop Production I	50	100	150	300	10
AGRI 10144Y(1)	Agrometeorology and Climate Change	30	60	90	180	6
AGRI 10145Y(1)	Data Handling and Research Methodology	30	60	90	180	6
AGRI 10146Y(1)	Botany and Plant Physiology	50	100	150	300	10
AGRI 10147Y(1)	Agricultural and Food Economics and Management	30	60	90	180	6
AGRI 10148Y(1)	Microbiology	30	60	90	180	6
AGRI 10149Y(1)	Principles of Genetics	30	60	90	180	6
AGRI 10150Y(1)	Introduction to Biosecurity	20	40	60	120	4
AGRI 11530(1)	Effective Scientific Communication: Principles and Practice I	20	40	60	120	4
AGRI 20152Y(3)	Biochemistry and Biotechnology	60	120	180	360	12
AGRI 20153Y(3)	Experimental Designs and Sampling Techniques	30	60	90	180	6
AGRI 20154Y(3)	Science and Technology of Foods	40	80	120	240	8
AGRI 20155Y(3)	Agricultural Engineering Principles	50	100	150	300	10
AGRI 20156Y(3)	Agricultural Management and Extension	30	60	90	180	6
AGRI 20157Y(3)	Animal Science	40	80	120	240	8
AGRI 20158Y(3)	Plant Pests, Diseases and Weeds	40	80	120	240	8
AGRI 20159Y(3)	Biosecurity Legislation and Regulatory Framework	30	60	90	180	6
AGRI 22790(3)	Effective Scientific Communication: Principles and Practice II	10	20	30	60	2
AGRI 20000	Practical Training				60	2
AGRI 30000Y(5)	Project				540	18
AGRI 30131Y(5)	Crop Production Technologies	50	100	150	300	10
AGRI 30132Y(5)	Sustainable Animal and Health Management Practices	50	100	150	300	10
AGRI 30133Y(5)	Farm Animal Biosecurity	30	60	90	180	6
AGRI 30134Y(5)	Plant Biosecurity	30	60	90	180	6
AGRI 30135Y(5)	Biosecurity Risk Assessment	30	60	90	180	6
AGRI 30136Y(5)	Food Safety and Biosecurity	30	60	90	180	6
TOTAL		920	1840	2760	6120	204

Total Number of Learner-Centred Credits (LCCS Credits) = 204 LCCS Credits (6120 Learning Hours)

9. Programme Plan – BSc (Hons) Agricultural Science and Technology (Minor: Biosecurity) (Full-Time)

YEAR 1

<u>Code</u>	<u>Module Name</u>	Teaching Contact (Hours)	Self-Study (Hours)	Directed Learning (Hours)	Total Learning (Hours)	<u>LCCS Credits</u>
AGRI 10141Y(1)	Agricultural Chemistry and Soil Science	50	100	150	300	10
AGRI 10142Y(1)	Animal Production: Principles and Techniques	30	60	90	180	6
AGRI 10143Y(1)	Agronomy and Horticultural Crop Production I	50	100	150	300	10
AGRI 10144Y(1)	Agrometeorology and Climate Change	30	60	90	180	6
AGRI 10145Y(1)	Data Handling and Research Methodology	30	60	90	180	6
AGRI 10146Y(1)	Botany and Plant Physiology	50	100	150	300	10
AGRI 10147Y(1)	Agricultural and Food Economics and Management	30	60	90	180	6
AGRI 10148Y(1)	Microbiology	30	60	90	180	6
AGRI 10149Y(1)	Principles of Genetics	30	60	90	180	6
AGRI 10150Y(1)	Introduction to Biosecurity	20	40	60	120	4
AGRI 11530(1)	Effective Scientific Communication: Principles and Practice I	20	40	60	120	4
TOTAL		370	740	1110	2220	74

YEAR 2

<u>Code</u>	<u>Module Name</u>	Teaching Contact (Hours)	Self-Study (Hours)	Directed Learning (Hours)	Total Learning (Hours)	<u>LCCS Credits</u>
AGRI 20152Y(3)	Biochemistry and Biotechnology	60	120	180	360	12
AGRI 20153Y(3)	Experimental Designs and Sampling Techniques	30	60	90	180	6
AGRI 20154Y(3)	Science and Technology of Foods	40	80	120	240	8
AGRI 20155Y(3)	Agricultural Engineering Principles	50	100	150	300	10
AGRI 20156Y(3)	Agricultural Management and Extension	30	60	90	180	6
AGRI 20157Y(3)	Animal Science	40	80	120	240	8
AGRI 20158Y(3)	Plant Pests, Diseases and Weeds	40	80	120	240	8
AGRI 20159Y(3)	Biosecurity Legislation and Regulatory Framework	30	60	90	180	6
AGRI 22790(3)	Effective Scientific Communication: Principles and Practice II	10	20	30	60	2
AGRI 20000	Practical Training				60	2
TOTAL		330	660	990	2040	68

YEAR 3

<u>Code</u>	<u>Module Name</u>	Teaching Contact (Hours)	Self-Study (Hours)	Directed Learning (Hours)	Total Learning (Hours)	<u>LCCS Credits</u>
AGRI 30000Y(5)	Project				540	18
AGRI 30131Y(5)	Crop Production Technologies	50	100	150	300	10
AGRI 30132Y(5)	Sustainable Animal and Health Management Practices	50	100	150	300	10
AGRI 30133Y(5)	Farm Animal Biosecurity	30	60	90	180	6
AGRI 30134Y(5)	Plant Biosecurity	30	60	90	180	6
AGRI 30135Y(5)	Biosecurity Risk Assessment	30	60	90	180	6
AGRI 30136Y(5)	Food Safety and Biosecurity	30	60	90	180	6
	TOTAL	220	440	560	1860	62

