BSc (Hons) Agriculture (Specialisation: Agricultural Extension) – A323 (Subject to Approval by Senate)

1. Objectives

Economic development and the changing socio-economic pattern of the Mauritian society 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 for the future to adopt a technology-based approach to render the local agricultural sector more productive, service-oriented, sustainable and competitive whilst responding to the environmental and ethical standards demanded by society. Government is also striving to alleviate poverty and democratise economic opportunities so that prosperity reaches all households and all people, particularly the vulnerable ones.

The further development of agriculture and its related industries is challenging and requires appropriate knowledge, skills and technology to keep pace with the latest international 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 knowledge of the science to meet these new challenges facing the Mauritian agriculture. Viewed the increasing complexity of agricultural practice, there is a need for enhanced capacity in technology transfer. This programme fills that requirement.

The programme is designed to develop technology transfer and entrepreneurial skills of students in the area of agriculture and food production.

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

- explain the scientific, economic and business principles underpinning crop and animal production methods in various types of production systems;
- identify technological problems encountered in current crop and livestock production systems;
- provide an understanding of the principles and tools available for agribusiness management and development;
- prepare themselves to serve in the field of Agriculture and Agribusiness in governmental, parastatal or private organisations;
- promote their ability to serve producer groups in improving their standards of living and managing agricultural enterprises;
- set up and operate their own agricultural enterprise;
- adopt innovative approaches to agricultural production;
- familiarise themselves with regional and global agricultural policy and strategy and its implications and regional agricultural development.
- Perform as researchers, extensionists, producers, farm managers, sales representatives and educationists.

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.

2 GCE 'A' Level passes in related approved Science subjects (Mathematics, Physics, Chemistry, Biology, Food Studies, Botany, Zoology, Computer Science or Computing).
Preference will be given to candidates holding an 'A' Level in Chemistry, Mathematics, Biology or Physics.

4. Programme Duration

<table>
<thead>
<tr>
<th></th>
<th>Normal (Years)</th>
<th>Maximum (Years)</th>
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</thead>
<tbody>
<tr>
<td>Degree</td>
<td>3</td>
<td>5</td>
</tr>
</tbody>
</table>

5. Credits per Year: Minimum 18 credits, Maximum 48 credits subject to Regulation 4.

6. Minimum Credits Required for the Award of Undergraduate Degree: 108

Breakdown as follows:

<table>
<thead>
<tr>
<th></th>
<th>Credits from</th>
</tr>
</thead>
<tbody>
<tr>
<td>Core Taught Modules</td>
<td>96</td>
</tr>
<tr>
<td>Project</td>
<td>9</td>
</tr>
<tr>
<td>Elective</td>
<td>3</td>
</tr>
</tbody>
</table>

Practical Training and the Scientific Communication module must be completed satisfactorily for the award of the degree.

Students may exit with

(a) a Certificate after having earned 30 credits in core modules.
(b) a 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. Modules from other Faculties/Departments/Centres will carry weighting in the Written Examination and the Continuous Assessment as specified by the concerned Faculties/Departments/Centres. Continuous Assessment will be based on laboratory/field works, and/or assignments, and should include at least 1 class test.

A minimum of at least 30% should be attained in each of Continuous Assessment and Written Examination, with an overall total of 40% for a candidate to pass a module.

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.

Modules will carry credits in the range of 3 to 6. Project will carry 9 credits.

Assessment of practical training will be based on supervisor’s report and student’s report. For satisfactory completion of the practical training, a minimum of 40% should be attained. The ‘Practical Training’ will be offered either at the end of year 1/or at the end of year 2, depending on placement opportunities.

Assessment of the scientific communication module will be based on continuous assessment of students throughout the module and/or submission of a portfolio. For satisfactory completion of the module, a minimum of 40% should be attained.

Written examinations for all the modules will be carried out at the end of the year.
8. **Important Note**

The rules as stipulated in this Programme Structure and Outline Syllabus will replace all other rules and regulations.

9. **List of Modules**

<table>
<thead>
<tr>
<th>Code</th>
<th>Module Name</th>
<th>Hr / Yr</th>
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<tbody>
<tr>
<td></td>
<td></td>
<td>L+P</td>
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<tr>
<td>COMS 1010 (1)</td>
<td>Communication Skills</td>
<td>DE</td>
<td>3</td>
</tr>
<tr>
<td>CSE 1010e (1)</td>
<td>Introduction to Information Technology</td>
<td>OE</td>
<td>3</td>
</tr>
<tr>
<td>AGRI 1018Y(1)</td>
<td>Agricultural Chemistry and Soil Science</td>
<td>45+60</td>
<td>5</td>
</tr>
<tr>
<td>AGRI 1019Y(1)</td>
<td>Crop Science</td>
<td>45+60</td>
<td>5</td>
</tr>
<tr>
<td>AGRI 1020Y(1)</td>
<td>Biology and Control of Plant Pests, Diseases, and Weeds</td>
<td>45+60</td>
<td>5</td>
</tr>
<tr>
<td>AGRI 1022Y(1)</td>
<td>Animal Science</td>
<td>45+60</td>
<td>5</td>
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<td>AGRI 1023Y(1)</td>
<td>Animal Production</td>
<td>45+60</td>
<td>5</td>
</tr>
<tr>
<td>AGRI 1035Y(1)</td>
<td>Agronomy and Horticultural Crop Production I</td>
<td>45+60</td>
<td>5</td>
</tr>
<tr>
<td>AGRI 2001Y (3)</td>
<td>Food Science and Technology</td>
<td>60+60</td>
<td>6</td>
</tr>
<tr>
<td>AGRI 2024Y (3)</td>
<td>Agricultural Engineering and Applications</td>
<td>45+45</td>
<td>4</td>
</tr>
<tr>
<td>AGRI 2025Y (3)</td>
<td>Introductory Applied Systems, Economics, Management and Extension</td>
<td>60+60</td>
<td>6</td>
</tr>
<tr>
<td>AGRI 2026Y (3)</td>
<td>Biotechnology</td>
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<td>6</td>
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<tr>
<td>AGRI 2045Y (3)</td>
<td>Statistical Methods for Agricultural Sciences</td>
<td>45+45</td>
<td>4</td>
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<tr>
<td>AGRI 2050Y (5)</td>
<td>Agricultural Extension: Principles, Methods and Management</td>
<td>60+60</td>
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<tr>
<td>AGRI 2051Y (3)</td>
<td>Communication and ICT in Agricultural Extension</td>
<td>30+30</td>
<td>3</td>
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<tr>
<td>AGRI 2052Y (3)</td>
<td>Rural Sociology and Rural Development</td>
<td>30+30</td>
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<tr>
<td>AGRI 2000Y (3)</td>
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<tr>
<td>AGRI 2027Y (5)</td>
<td>Animal Production and Health</td>
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<td>AGRI 2061Y (5)</td>
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<tr>
<td>AGRI 2062Y (5)</td>
<td>Agricultural Systems and Agricultural Management Information System</td>
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<tr>
<td>AGRI 2063Y (5)</td>
<td>Participatory approaches in agricultural research and Extension</td>
<td>60+60</td>
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<tr>
<td>AGRI 3100</td>
<td>Scientific Communication</td>
<td>20+0</td>
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**ELECTIVES (Choose one from)**

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<td>AGRI 3031Y(5)</td>
<td>Agro-industrial Development for SMEs</td>
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AGRI2000 - Practical Training can be done in either Year 1 or Year 2
AGRI3100 – Scientific Communication will be done in Semester 1 in Year 3

Total no. of credits : 108
10. Programme Plan - BSc (Hons) Agriculture (Specialisation: Agricultural Extension)

### YEAR 1

<table>
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**AGRI2000 - Practical Training can be done in either Year 1 or Year 2**

### YEAR 3

<table>
<thead>
<tr>
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<tr>
<td>AGRI 3000Y(5)</td>
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**Total no. of credits : 108**
11. Outline Syllabus

COMS 1010(1) - COMMUNICATION SKILLS
Writing skills, non-verbal communication, modes of speech delivery and presentation aids, speeches, perception and listening skills, business and technical writing.

CSE 1010e(1) - INTRODUCTION TO INFORMATION TECHNOLOGY
Information Technology and Computers; Stepping in the Computer; Input and Output Devices; Secondary Storage; Programming; Systems Software; Applications Software; Systems Development; Computer Networks; The Internet; Computer Security; Software Utilities; Issues and Trends in IT.

AGRI 1018Y (1) – AGRICULTURAL CHEMISTRY AND SOIL SCIENCE


AGRI 1019Y(1) - CROP SCIENCE
Classification, identification, morphology, ecology and uses of economically important crops. Mendelian Inheritance. Linkage and chromosome mapping. Sex linked and extra-nuclear inheritance. Quantitative and population genetics.


AGRI 1020Y(1) - BIOLOGY AND CONTROL OF PLANT PESTS, DISEASES AND WEEDS
Taxonomy, systematic, biology, ecology and economic importance of pests, plant pathogens and weeds affecting crops. Control and management of pests, diseases and weeds of crop plants. Concept and principles of IPM. Biological, physical, chemical, cultural and biology-based methods of pest control. Economics of crop protection.

AGRI 1022Y(1) - ANIMAL SCIENCE

Avian Reproductive Systems and The mammary gland structure. Endocrine effects on animal products: Milk production, egg production.


An introduction to the basic principles of quantitative and qualitative genetics. Breeding systems of various farm animals.


AGRI 1023Y(1) - ANIMAL PRODUCTION
Role and importance of animal production systems in agricultural enterprises: poultry, pigs, beef and dairy cattle, deer, sheep, goats, rabbits, production potential of novel species. Constraints to animal productivity and production. Public concerns over animal production practices.

Fundamental stockmanship for managing farm animals: rationing; weighing and tagging; usage of preventive and diagnostic equipment; handling and restraining animals, animal’s environment; evaluation of body condition score; performance records. Diagnosing farm animal abnormal behaviour. Animal housing evaluation.

AGRI 1035Y(1) - AGRONOMY AND HORTICULTURAL CROP PRODUCTION I
Applied crop physiology. Husbandry and production of economically important horticultural crops. Field operations and techniques in crop production.

AGRI 2001Y(3) - FOOD SCIENCE AND TECHNOLOGY


AGRI 2024Y(3) – AGRICULTURAL ENGINEERING AND APPLICATIONS
Basic engineering science relevant to agriculture, soil systems and water.


Farm structures and farm buildings. Waste management technology. Agro-meteorology. Introduction to controlled environment technology.
AGRI 2025Y(3) - INTRODUCTORY APPLIED SYSTEMS, ECONOMICS, MANAGEMENT AND EXTENSION
Introduction to agricultural systems concepts: holistic approach to agriculture; an overview of farming systems in the World with particular reference to the SADC region.


Agriculture and Economic Development: Evolution of the Mauritian agricultural sector from beginnings to present days; challenges facing the Mauritian agricultural sector.

Agricultural management: The framework of farm management; introductory farm budgeting. Business management issues.

Agricultural Marketing: from commodity marketing to value-addition in agricultural products; marketing functions; marketing channels and costs.

Agricultural Extension: Introductory concepts and principles; Participatory approach in agricultural research, production and extension.

AGRI 2026Y (3) – BIOTECHNOLOGY
Structure and functions of cells and organelles; Bio molecules: Polysaccharides, sugars; storage polysaccharides; Lipids, classification and properties, biological membranes; Proteins, amino acids, covalent and three-D structure of proteins; Enzymes, properties and mechanism of actions, enzyme kinetics. Glycolysis.


Concept and basis of biotechnology. Tissue culture techniques and applications. Application of biotechnology in agriculture and crop improvement.

AGRI 2045Y(3) - STATISTICAL METHODS FOR AGRICULTURAL SCIENCES

Introduction to research methodology. Qualitative and quantitative research. Sampling methods. Questionnaire development, design and administration. Data coding and processing using SPSS. Elements of scientific and technical writing.

AGRI 2050Y(5) - AGRICULTURAL EXTENSION: PRINCIPLES, METHODS AND MANAGEMENT

Emerging issues: alternative models for provision of extension. Role of NGOs and Farmer Organisations. Entrepreneurship and promotion of SMEs.

**AGRI 2051Y(5) - COMMUNICATION AND ICT IN AGRICULTURAL EXTENSION**

**AGRI 2052Y(5) - RURAL SOCIOLOGY AND RURAL DEVELOPMENT**

**AGRI 3000Y(5) - PROJECT**
Every student will be allocated a research topic related to agricultural extension and technology transfer. The research work will be carried out under academic supervision. Students should demonstrate good practice in using skills and knowledge acquired during the programme and follow dissertation guidelines as laid down by the Faculty of Agriculture.

**AGRI 3027Y(5) - ANIMAL PRODUCTION AND HEALTH**
Principles of managing animals in typical production systems for biological and economic sustainability: poultry, pigs; rabbits; deer; goats and sheep; beef and dairy cows and novel species. Best management practices for their efficient and profitable production: nutrition, reproduction and fertility, housing and equipment, waste management technologies.

Food chain management from primary production to consumer use. Trends and current issues related to production and consumption of animal products: meeting the needs of a global market and public concerns.


Animal welfare concepts and definition (e.g., the five freedoms). Specific requirements for the welfare of named ruminants and non-ruminants. Methods for assessing animal welfare status.

**AGRI 3061Y (5) - EMERGING TECHNOLOGIES IN CROP PRODUCTION**

AGRI 3062Y(5) - AGRICULTURAL SYSTEMS AND AGRICULTURAL MANAGEMENT INFORMATION SYSTEM


AGRI 3063Y (5) - PARTICIPATORY APPROACHES IN AGRICULTURAL RESEARCH AND EXTENSION


AGRI 3100 - SCIENTIFIC COMMUNICATION

ELECTIVES (CHOOSE ONE FROM)
AGRI 3030Y(5) - INTERNATIONAL AND REGIONAL AGRICULTURAL TRADE


AGRI 3031Y(5) - AGRO-INDUSTRIAL DEVELOPMENT FOR SMES