

# **MSc Food Safety and Food Innovation**

## **Part-Time (2 Years) – (A520)**

### **1. CONTEXT AND OBJECTIVES**

#### **Context**

The global burden of foodborne disease is alarming. The steep increase in food fraud highlights the vulnerability of complex food supply chains. Food businesses throughout the food chain have the responsibility to implement high standards of food hygiene to ensure food safety and protect public health. Food innovation involves nurturing creative minds to develop new ways of applying science and existing/emerging technology to manufacture safe, healthy and sustainable food. High unemployment rate, increased incidence of diet-related diseases, evolving consumer needs and preferences, competitiveness in international trade, disruptive technology, the urgency of climate change and sustainable development, call for the need to embrace the food innovation mindset.

#### **Objectives**

This programme is designed to develop profound understanding of emerging food safety hazards and incidents, new food ingredients, innovative food product formulation and processing methods, smart postharvest technology and food packaging, contemporary approaches to food safety management and food entrepreneurship. It focuses on engaging learners in the creative use of scientific knowledge to formulate and manufacture safe, healthy and environment-friendly food products. It also aims at building competencies to enhance employability, increase confidence in scientific and business skills, promote women's entrepreneurial empowerment and contribute to food innovation for sustainable socio-economic growth.

#### **Career Opportunities**

The target market for this course includes Home-Economics officers from the National Women Entrepreneur Council, food professionals (including officers from the Ministry of Agro-Industry and Food Security), as well as graduates who aspire for a career in the agri-food sector.

### **2. LEARNING OUTCOMES**

Upon completion of this programme, learners should be able to:

- Explain the origin, causes, consequences and control of food safety hazards and food incidents;
- Describe methods to monitor food safety hazards in food ingredients and food products;
- Undertake analysis of food products for selected physical, chemical, sensory and microbiological characteristics;
- Describe relevant food standards and laws for food ingredients, food production processes, food products, food labelling and packaging;
- Explain the importance of food supply chain integrity, traceability and ingredient food safety/fraud risk assessment;
- Apply food hygiene and HACCP principles to food production processes, from supplier control to food service and retail;
- Engage in the evaluation and shaping of a positive food safety culture for sustained effectiveness of food safety management systems;

- Examine the product development process from product conception through to product launch;
- Describe current/emerging trends in food ingredients, consumer demand, expectations and dietetic needs;
- Explain the relevance of the United Nations Sustainable Development Goals (SDGs) and climate change to food production, consumption and security;
- Select appropriate ingredients for innovative and sustainable food product design;
- Develop and validate food processing methods for new food products;
- Select appropriate and smart packaging for extended food product storage stability;
- Evaluate the factors necessary for successful penetration of new food products on the market;
- Transfer relevant knowledge, skills and technology concepts to food enterprises, in compliance with intellectual property rights;
- Set up food enterprises with export potential;
- Demonstrate effective oral and written scientific communication skills;
- Implement the scientific research process effectively and ethically; and
- Apply transferable skills to the workplace for enhanced sustainability.

### **3. TEACHING AND LEARNING METHODS**

Modules shall be taught over 10 weeks and shall include 3 hours of contact per week, involve 6 hours of self-study per week and 9 hours of other learning activities per week for each semester. 30 contact hours shall include lectures, tutorials and laboratory practicals. Teaching and assessment methods will make use of digital technologies to develop in-depth, reflective, integrative, interactive and autonomous learning.

### **4. ENTRY REQUIREMENTS**

- **General Requirements**

At least a Second Class or a CPA  $\geq 50\%$ , whichever is applicable or  
A GPA not less than 2.5 out of 4 or equivalent, from a recognised higher education institution.

**OR alternate qualifications acceptable to the University of Mauritius.**

- **Programme Requirements**

A Bachelor's Degree or equivalent qualifications acceptable to the University of Mauritius.

## 5. PROGRAMME DURATION

|                            | <b>Normal<br/>(Years)</b> | <b>Maximum<br/>(Years)</b> |
|----------------------------|---------------------------|----------------------------|
| Master's Degree (P/T)      | 2                         | 4                          |
| Postgraduate Diploma (P/T) | 1.5 - 2                   | 4                          |
| Postgraduate Certificate   | 1 - 2                     | 3 - 4                      |

## 6. LCCS CREDITS TO BE EARNED:-

### Minimum and Maximum number of LCCS credits per semester:

Minimum 6 LCCS credits per semester subject to Section 3.4 of the UoM Regulations

Maximum 48 LCCS credits per semester subject to Section 3.4 of the UoM Regulations

### Total Number of LCCS credits required to earn the award is 84

(2520 notional learning hours including contact, self-study and other learning activities hours:  
84 x (5 +10+15)).

### Exit Points:

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

|   | <b>LCCS Credits</b> |
|---|---------------------|
| Postgraduate Diploma in Food Safety and Food Innovation     | 60                  |
| Postgraduate Certificate in Food Safety and Food Innovation | 36                  |

## 7. ASSESSMENT AND DEADLINES

The achievement of the modules learning outcomes will be assessed through a variety of methods (e.g., quizzes, class tests, case study assignments, presentations, laboratory reports and portfolios). 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 to 3 hour duration, carrying a weighting of 60%, and continuous assessment carrying a weighting of 40%. Continuous assessment will comprise of class tests and different types of assignments, and will include at least 1 class test per module. Module learning outcomes, assessment criteria/methods and deadlines will be specified in respective Module Catalogues, which will be communicated to students at the beginning of each semester of the academic year.
- The module AGRI 6012 (1) New Food Product Development, assessment will be assessed by a written examination of 2.5 hour duration, carrying a weighting of 50%, and continuous assessment carrying a weighting of 50% (15% for the class test and 35% for the group presentation/portfolio).
- An overall total of 40 % for combined continuous assessment and written examination components will be required to pass a module, without minimum thresholds within individual continuous assessment and written examination.
- The written examinations will be carried out at the end of each semester.

- The module AGRI 6004 (1) Scientific Research and Communication will be assessed by continuous assessment only. The module will be offered on blended delivery mode, involving on-line teaching and assessment, as well as face-to-face tutorials.
- Modules will carry LCCS credits in the range of 4 to 8, except for the dissertation which carries 24 LCCS credits. The dissertation shall be submitted after the second year, semester 2 examinations, not later than the last week day of August, as per current University of Mauritius regulations.
- The module AGRI 6010 (1) Work Ethics and Culture does not carry any LCCS credits. The number of teaching contact hours is 15. Assessment will be based on submission of a report at the end of the semester. For satisfactory completion of the module, a minimum of 40% should be attained.

## 8. LIST OF MODULES

| Code          | Module Name   | L*/T*/P*<br>(Contact Hours) | Self-Study Hours | Other Learning Hours | LCCS Credits |
|---------------|---|-----------------------------|------------------|----------------------|--------------|
| AGRI 6001 (1) | Food Microbiology                                       | 30                          | 60               | 90                   | 6            |
| AGRI 6002 (1) | Food Chemistry and Food Analysis                        | 30                          | 60               | 90                   | 6            |
| AGRI 6003 (1) | Statistical Techniques and Analysis                     | 30                          | 60               | 90                   | 6            |
| AGRI 6004 (1) | Scientific Research and Communication                   | 20                          | 40               | 60                   | 4            |
| AGRI 6006 (1) | Food Hygiene and Food Safety                            | 30                          | 60               | 90                   | 6            |
| AGRI 6007 (1) | Food Processing, Food Waste and Sustainable Development | 30                          | 60               | 90                   | 6            |
| AGRI 6008 (1) | Entrepreneurship and Food Marketing                     | 40                          | 80               | 120                  | 8            |
| AGRI 6009 (1) | Food Safety Management and Food Safety Culture          | 30                          | 60               | 90                   | 6            |
| AGRI 6011 (1) | Current Issues in Food Innovation and Novel Foods       | 30                          | 60               | 90                   | 6            |
| AGRI 6012 (1) | New Food Product Development                            | 30                          | 60               | 90                   | 6            |
| AGRI 6010 (1) | Work Ethics and Culture                                 | 15                          | -                | -                    | -            |
| AGRI 6000Y(1) | Project   | -                           | -                | -                    | 24           |
| <b>TOTAL</b>  |   | <b>315</b>                  | <b>600</b>       | <b>900</b>           | <b>84</b>    |

*Note: Contact Hours: L\*= Lecture, T\*= Tutorials, P\*= Practicals*

## 9. PROGRAMME PLAN

### YEAR 1 SEMESTER 1

| Code             | Module Name                         | L*/T*/P*<br>(Contact Hours) | LCCS Credits |
|------------------|-------------------------------------|-----------------------------|--------------|
| AGRI 6001 (1)    | Food Microbiology                   | 30                          | 6            |
| AGRI 6002 (1)    | Food Chemistry and Food Analysis    | 30                          | 6            |
| AGRI 6003 (1)    | Statistical Techniques and Analysis | 30                          | 6            |
| <b>SUB TOTAL</b> |                                     | <b>90</b>                   | <b>18</b>    |

### YEAR 1 SEMESTER 2

| Code             | Module Name   | L*/T*/P*<br>Contact Hours | LCCS Credits |
|------------------|---|---------------------------|--------------|
| AGRI 6004 (1)    | Scientific Research and Communication                   | 20                        | 4            |
| AGRI 6006 (1)    | Food Hygiene and Food Safety                            | 30                        | 6            |
| AGRI 6007 (1)    | Food Processing, Food Waste and Sustainable Development | 30                        | 6            |
| <b>SUB TOTAL</b> |   | <b>80</b>                 | <b>16</b>    |

### YEAR 2 SEMESTER 1

| Code             | Module Name                                    | L*/T*/P*<br>(Contact Hours) | LCCS Credits |
|------------------|--|-----------------------------|--------------|
| AGRI 6008 (1)    | Entrepreneurship and Food Marketing            | 40                          | 8            |
| AGRI 6009 (1)    | Food Safety Management and Food Safety Culture | 30                          | 6            |
| <b>SUB TOTAL</b> |  | <b>70</b>                   | <b>14</b>    |

### YEAR 2 SEMESTER 2

| Code               | Module Name                                       | L*/T*/P*<br>Contact Hours | LCCS Credits |
|--------------------|---|---------------------------|--------------|
| AGRI 6010 (1)      | Work Ethics and Culture                           | 15                        | -            |
| AGRI 6011 (1)      | Current Issues in Food Innovation and Novel Foods | 30                        | 6            |
| AGRI 6012 (1)      | New Food Product Development                      | 30                        | 6            |
| AGRI 6000Y(1)      | Project   | -                         | 24           |
| <b>SUB TOTAL</b>   |   | <b>75</b>                 | <b>36</b>    |
| <b>GRAND TOTAL</b> |   | <b>315</b>                | <b>84</b>    |

*Note: Contact Hours: L\*= Lecture, T\*= Tutorials, P\*= Practicals*

