

## Liverpool John Moores University

Title: Knowledge of Food Safety and Control  
Status: Definitive  
Code: **4503YAUNUT** (127926)  
Version Start Date: 01-08-2021

Owning School/Faculty: Sport and Exercise Sciences  
Teaching School/Faculty: Yunnan Agricultural University

Team	Leader
Elizabeth Mahon	Y

**Academic Level:** FHEQ4  
**Credit Value:** 20  
**Total Delivered Hours:** 112  
**Total Learning Hours:** 200  
**Private Study:** 88

### Delivery Options

Course typically offered: Semester 2

Component	Contact Hours
Lecture	62
Online	16
Practical	32

**Grading Basis:** 40 %

### Assessment Details

Category	Short Description	Description	Weighting (%)	Exam Duration
Exam	Exam	Combination of exam and quizzes for Food Microbiology	32	2
Presentation	Pres	10 min presentation food microbiology	4	
Portfolio	Portfolio	Portfolio of performance and report for Food Microbiology	4	
Test	Test	Test - Final Exam for Food Toxicology	30	2
Practice	Practice	Practice - Practical performance for Inspection of Food Microbiology	15	
Report	Report	Report for Inspection of Food Microbiology	15	

## Aims

*The aim of this module is to introduce students to food microbiology, food toxicology and the inspection of food microbiology.*

*Food Microbiology requires students to study the morphological and structural characteristics, physiological and biochemical characteristics, growth and reproduction, and the influence of environmental factors on the growth of microorganisms. Students will learn the theory of microbial classification, ecological and genetic variation, and develop and utilize beneficial microorganisms and control harmful microorganisms that cause food spoilage and food-borne food poisoning.*

*As an introduction to food toxicology students will study the safety limits of chemical substances in food, evaluate the safety of food, and establish relevant hygienic standards.*

## Learning Outcomes

After completing the module the student should be able to:

- 1 Explain the presence of pathogenic and spoilage microorganisms associated with different foods.
- 2 Explain how microorganisms grow, and can be used in a positive manner and also controlled in foods
- 3 Develop practical skills in analytical methods to evaluate the microbial quality and safety levels of food.

## Learning Outcomes of Assessments

The assessment item list is assessed via the learning outcomes listed:

Exam & quizzes	1	2
Microbiology		
Presentation 10 min	1	
Portfolio - performance & rpt	3	
Toxicology test/exam	2	
Practical performance	3	
Report	2	3

## Outline Syllabus

*The biological characteristics of microorganisms, a brief history of microbial development. Microbial morphology and structure. Microbial nutrition and Medium. The influence of environmental factors on the growth of microorganisms. Microbial catabolism and anabolism. Genetic variation and breeding of microorganisms.*

*Microbial ecology. Major microorganisms in food manufacturing and their applications. Microorganisms and food spoilage. Food poisoning and foodborne pathogenic microorganisms.*

*The basic concepts of food toxicology and the general rules of the interaction between food exogenous chemicals and the body. The concept and content of safety evaluation procedure and risk evaluation of food exogenous chemicals. The metabolic process of the body of the main exogenous chemicals in food (natural substances, derivatives, pollutants, additives) and the toxicity harm to the body.*

*Inspection of food microbiology will be largely practical. It will include: isolation and purification of microorganisms in foods; determination of the total number of bacterial colonies in foods; determination of moulds and yeasts in foods; detection of coliform group in foods; inspection of Staphylococcus aureus in foods; and inspection of Salmonella in foods.*

## **Learning Activities**

The module content will be delivered through lectures, online resources and activities and practical sessions. Theoretical lectures will provide appropriate subject knowledge to support the practical application.

## **Notes**

This module is for individuals to understand the development of microbiology, the essential characteristics of microorganisms, the application of microorganisms in food manufacturing, and food safety issues caused by microorganisms. Individuals will also develop the necessary practical skills in food microbiology and think about food safety issues.