

Liverpool John Moores University

Title: Food Analysis
Status: Definitive
Code: **5502YAUNUT** (127929)
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: FHEQ5 **Credit Value:** 20 **Total Delivered Hours:** 122
Total Learning Hours: 200 **Private Study:** 78

Delivery Options

Course typically offered: Semester 1

Component	Contact Hours
Lecture	96
Practical	24

Grading Basis: 40 %

Assessment Details

Category	Short Description	Description	Weighting (%)	Exam Duration
Exam	Exam	Combination of exam and tests covering Food Chemistry	30	2
Test	Test	Food Analysis Test/Exam	28	2
Portfolio	Portfolio	Portfolio of class and homework in food analysis	12	
Practice	Practice	Practice - Exam in Modern Instrument Analysis	30	2

Aims

Through the study of this module students will learn about the principles of food chemistry and the scope of food analysis. Students will understand the structure and nature of the main ingredients in food materials, the interaction between food

ingredients and the physical, chemical and biochemical changes of these ingredients in food processing and preservation. Students will also gain an understanding of the basic principles, methods and instruments of analysis used in this field. Students will discover and master the use of standard detection methods of general nutrition analysis, food additive analysis, and poisonous and harmful ingredients in food.

This module provides a necessary foundation for students to further study the theory and technology of food processing and preservation, and also lays a broader theoretical foundation for students to engage in research and product development in food processing, preservation and related fields in the future.

Learning Outcomes

After completing the module the student should be able to:

- 1 Identify and compare the chemical composition and properties of food and their changing rules in the process of storage, transportation and processing.
- 2 Explain the principles, composition, structure, technical indicators and application of various modern analytical instruments.
- 3 Show scientific analysis of experimental results through rigorous experimental operation norms

Learning Outcomes of Assessments

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

Food Chemistry Exam & Tests	1	
Food Analysis Test	1	3
Food Analysis Portfolio	1	3
Instruement Analysis Practice	2	

Outline Syllabus

Food chemistry: the chemical composition and properties of food and their changing rules in the process of storage, transportation and processing.

Food analysis: students will study the selection and application of food (including raw materials) sample treatment and determination methods, mainly including the following four aspects: 1. Nutrition ingredient analysis. 2. Determination of contaminants. 3. Raw materials and additives. 4. Sensory test.

Spectroscopic methodology. UV-vis spectrophotometry. Atomic absorption spectrophotometry. Atomic fluorescence spectrophotometry. Chromatographic basis. Liquid chromatography. Gas-chromatography. Mass spectrometry.

Learning Activities

This module will be taught through: lectures; video discussion; group work; and practical experiments.

Theoretical and practical concepts and principles will be introduced and developed through a combination of lectures, seminars and practical learning activities.

Students will also be involved in a range of directed tasks which will be completed as independent study. Students will be required to complete background reading and preparations before lecture and practical sessions in order to aid their contribution to discussions and debates from an informed point of view.

Notes

This module is designed to extend the student's knowledge and understanding of the attributes of food chemistry and food analysis.

Food analysis is a technical subject specialized in studying the detection methods and related theories of various food ingredients, and then evaluating food quality.

This module contains a practical element, which teaches the working principles, instrument operation, and sample analysis methods and instrument analysis application of six general large modern analytical instruments.