

Liverpool John Moores University

Title: FOOD SCIENCE
Status: Definitive
Code: **5024TEF** (103801)
Version Start Date: 01-08-2018

Owning School/Faculty: Sports Studies, Leisure and Nutrition
Teaching School/Faculty: Sports Studies, Leisure and Nutrition

| Team | Leader |
|---------|--------|
| Drew Li | Y |

Academic Level: FHEQ5 **Credit Value:** 24 **Total Delivered Hours:** 63
Total Learning Hours: 240 **Private Study:** 177

Delivery Options

Course typically offered: Standard Year Long

| Component | Contact Hours |
|-----------|---------------|
| Lecture | 38 |
| Practical | 16 |
| Seminar | 4 |
| Tutorial | 2 |

Grading Basis: 40 %

Assessment Details

| Category | Short Description | Description | Weighting (%) | Exam Duration |
|----------|-------------------|-----------------------------|---------------|---------------|
| Report | AS1 | 2,000 word Practical Report | 50 | |
| Exam | AS2 | Exam | 50 | 3 |

Aims

To study the structure, function and interaction of food components (in fruit, vegetable, cereal, meat, fish and fat derived products) and relate food component interactions to the concept of food quality. To identify the need for food preservation and processing operations (including the conversion of agricultural raw materials into food products); and to outline the major chemical, physical, biological, and nutritional

changes occurring in foods during food processing and food manufacture. The module also identifies the need of food quality assurance and quality management systems during food production, food processing and food manufacture.

Learning Outcomes

After completing the module the student should be able to:

- 1 Describe the structural function and the chemical properties of food components
- 2 Assess and evaluate the effects of treatments and processing on the composition of foods.
- 3 Conduct and critically evaluate food-related experimental work, testing hypotheses and analysing data using scientific methodologies.

Learning Outcomes of Assessments

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

| | | |
|------------------|---|---|
| Practical Report | 3 | |
| EXAM | 1 | 2 |

Outline Syllabus

The biological chemistry of selected macro-molecular food components (proteins, lipids, polysaccharides); the characteristic behaviour of solutions, gels and dispersions; the properties of water in foods; the structure, texture and composition of selected food sources (animal, fruit, vegetable and cereal derived foods); post-harvest physiology, food spoilage and deterioration; food preservation technologies & operations involved in converting raw materials into food products (heat, low temperature treatments, drying, food additives, enzymes and micro-organisms); changes in structure, texture, composition and nutritional status during food processing operations. The concept of food quality, and the need for food quality assurance and management systems.

Learning Activities

Lectures, practical work and seminars. Group-based practical work will allow students to work collectively to develop understanding of important food-related experimental methodologies, help develop analytical and critical thinking, and develop report writing skills. The student-led seminars will require students to apply their understanding of food processing operations to specific foods, critically evaluating the effects of such processing operations orally to small groups of fellow students.

Notes

This module examines the composition of a wide range of foods, and investigates how food component interactions influence food quality. The module has a particular emphasis on why there is a need to process foods, and the consequences of food processing operations on food quality, particularly the nutritional status and sensory characteristics of foods. Evidence from this module may contribute to WoW certification.