

Summary Information

Module Code	6105BMBMOL
Formal Module Title	Nutraceuticals and Toxicology
Owning School	Pharmacy & Biomolecular Sciences
Career	Undergraduate
Credits	20
Academic level	FHEQ Level 6
Grading Schema	40

Module Contacts
Module Leader

Contact Name	Applies to all offerings	Offerings
Pattanathu Rahman	Yes	N/A

Module Team Member

Contact Name	Applies to all offerings	Offerings
Kehinde Ross	Yes	N/A
Darren Sexton	Yes	N/A
Giles Watts	Yes	N/A
Sandra Fawcett	Yes	N/A
Kenneth Ritchie	Yes	N/A
Gordon Lowe	Yes	N/A
Emmanuel Babafemi	Yes	N/A
Jari Louhelainen	Yes	N/A
Janice Harland	Yes	N/A

Laura Randle	Yes	N/A
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Partner Module Team

Contact Name	Applies to all offerings	Offerings
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Teaching Responsibility

LJMU Schools involved in Delivery
Pharmacy & Biomolecular Sciences

Learning Methods

Learning Method Type	Hours
Lecture	40
Practical	9
Seminar	4
Workshop	6

Module Offering(s)

Offering Code	Location	Start Month	Duration
JAN-CTY	CTY	January	12 Weeks

Aims and Outcomes

Aims	1. To develop an in-depth knowledge of biochemistry, physiology and pathology of nutraceuticals in relation to health and disease.2. To introduce the principles of toxicity and structural manifestations of toxicity to cells, tissues and organ systems.3. To emphasise the importance of nutraceuticals and toxicology within the context of Biomedical Science including future directions of research.
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Learning Outcomes

After completing the module the student should be able to:

Code	Description
MLO1	Appreciate the importance of nutraceuticals in the food industry and discuss their current and future developments
MLO2	Evaluate the mode of action of nutraceuticals in health and disease

MLO3	Demonstrate the mechanisms of toxicity and methods to identify toxic effects of nutraceuticals in major organs
MLO4	Assess the efficacy of nutraceuticals in the laboratory and present the results in the form of a scientific paper

Module Content

Outline Syllabus

Historical perspective, Concept of diet and health, nutrition in health and disease, Nutraceuticals, historical background, current usage, EU regulation, Nutraceuticals usage in Liver disease, Cardiovascular Disease, Renal Disorders, Skin Disease, Gastrointestinal disease, Cancer. Nutraceuticals usage in ageing population, Age related diseases, Nutraceuticals immunology and inflammation, Cosmetics and personalised medicine. Nutrigenomics, Nutraceuticals and gene interactions, Future perspectives. Toxicology, Xenobiotics, Toxicology of drugs and nutraceuticals and natural compounds, Mechanisms of toxicity, Experimental models of toxicity, Investigative toxicology, Association of food and toxicology, Toxicology associated with nutraceuticals and liver, cardiovascular system, renal system, skin. Bacterial toxicology, Pro-biotics, Pre-biotics, Microbes in health and disease, Toxicology of cosmetics, Gene interactions and nutraceuticals Current and Future issues related to nutraceuticals and toxicology.

Module Overview

The aim of this module is to develop an in-depth knowledge of biochemistry, physiology and pathology of nutraceuticals in relation to health and disease. You will be introduced to principles of toxicity and structural manifestations of toxicity to cells, tissues and organ systems. It will also emphasise the importance of nutraceuticals and toxicology within the context of Biomedical Science including future directions of research.

Additional Information

The module will be delivered in semester 2 and consists of lectures, practicals, workshop and seminars.

Assessments

Assignment Category	Assessment Name	Weight	Exam/Test Length (hours)	Learning Outcome Mapping
Centralised Exam	Exam	50	2	MLO4, MLO2, MLO1, MLO3
Centralised Exam	Practical Write-up as Paper	50	0	MLO4, MLO2, MLO3