Liverpool John Moores University

Title:	NUTRACEUTICALS AND TOXICOLOGY
Status:	Definitive
Code:	**6105BMBMOL** (122474)
Version Start Date:	01-08-2021
Owning School/Faculty:	Pharmacy & Biomolecular Sciences
Teaching School/Faculty:	Pharmacy & Biomolecular Sciences

Team	Leader
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Academic Level:	FHEQ6	**Credit Value:**	20	**Total Delivered Hours:**	61
Total Learning Hours:	200	**Private Study:**	139		

Delivery Options
Course typically offered: Semester 2

Component	Contact Hours
Lecture	40
Practical	9
Seminar	4
Workshop	6

Grading Basis: 40 %

Assessment Details

Category	Short Description	Description	Weighting (%)	Exam Duration
Exam	Exam	Exam	50	2
Report	Report	Practical Report	50	

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.

Learning Outcomes

After completing the module the student should be able to:

1	Appreciate the importance of nutraceuticals in the food industry and discuss their current and future developments
2	Evaluate the mode of action of nutraceuticals in health and disease
3	Demonstrate the mechanisms of toxicity and methods to identify toxic effects of nutraceuticals in major organs
4	Assess the efficacy of nutraceuticals in the laboratory and present the results in the form of a scientific paper

Learning Outcomes of Assessments

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

Exam	1	2	3	4
Practical Write-up as Paper	2	3	4	

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.

Learning Activities

Lectures will provide in-depth knowledge of the subject whilst the workshops will help in the development of the basic and advanced principles delivered in the lectures. The practical sessions will introduce techniques used in the field of xenobiotics and will also provide an opportunity to write the results in the format of a paper to be published in the "Journal of Nutrition" thus giving students further experience of writing scientific papers.

Notes

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