

Liverpool John Moores University

Title: CURRENT TOPICS IN PHYSIOLOGY AND METABOLISM
Status: Definitive
Code: **7133NATSCI** (126193)
Version Start Date: 01-08-2021

Owning School/Faculty: Biological and Environmental Sciences
Teaching School/Faculty: Biological and Environmental Sciences

Team	Leader
Julia Nowack	Y
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Academic Level: FHEQ7 **Credit Value:** 20 **Total Delivered Hours:** 42

Total Learning Hours: 200 **Private Study:** 158

Delivery Options

Course typically offered: Semester 1

Component	Contact Hours
Lecture	8
Practical	9
Seminar	6
Tutorial	12
Workshop	5

Grading Basis: 50 %

Assessment Details

Category	Short Description	Description	Weighting (%)	Exam Duration
Portfolio	PORTFOLIO	Case study report and communication to the general public (blog + social media)	60	
Exam	Exam	Essay	40	2

Aims

To provide an understanding of advanced and cutting edge topics in physiological and metabolic sciences relevant to plants, animals and humans.

Learning Outcomes

After completing the module the student should be able to:

- 1 Critically scrutinise historic and recent literature relevant to physiology and metabolism in health and disease conditions
- 2 Critically evaluate current research methods in physiology and metabolism
- 3 Communicate scientific information in an effective manner, translating original research to a wider, non-academic audience by the use of internet-based communication channels

Learning Outcomes of Assessments

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

CASE STUDY	1	2	3
PORTFOLIO			
Examination	1	2	

Outline Syllabus

This module focuses on cutting-edge and advanced physiology and metabolism, including membrane physiology, exercise physiology, metabolism and nutrition, extreme physiology (high altitude, deep sea, space, and endurance physiology), thermoregulation and non-shivering thermogenesis, chronophysiology, the effects of gut microbiota on host physiology, physiology of the reproductive system, or metabolic stressors. Students will learn about mechanisms that ensure homeostasis in the organism, and how disruptions in these mechanisms can increase the risk of or lead to disease.

Learning Activities

The module will be delivered primarily using a problem-based learning approach, supported by tutorials and lectures. The students will work in groups to research a series of case studies guiding them through relevant advanced course material. Practical classes will provide opportunities to develop wet lab experience and relevant practical skills. Seminars will offer opportunities for critical evaluation of cutting edge research.

Notes

This module will present cutting-edge research relevant to physiology and metabolism, and as such the specific contents will reflect the current trends in the field. Examples of topics are: mechanisms of heat generation; digestive, respiratory and excretory adaptations to changing environments; contribution of the gut microbiota to non-communicable diseases, such as obesity and diabetes; sleep disruption and metabolic alterations; metabolic adaptations to hypoxia; uterine physiology and prenatal programming of health and disease; metabolic stressors.