London South Bank University

Module Guide

Physics for Life

ASC-5-443-1617

School of Applied Sciences

2016/17

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1. MODULE DETAILS

Module Title:	Physics for Life
Module Level:	5
Module Reference Number:	ASC_5_443_1617
Credit Value:	20
Student Study Hours:	200
Contact Hours:	50
Private Study Hours:	150
Pre-requisite Learning (If applicable):	None
Co-requisite Modules (If applicable):	None
Course(s):	Biosciences
Year and Semester	2017 Semester 2
Module Coordinator:	Jin Luo
MC Contact Details (Tel, Email, Room)	(Tel: 7941, Email: Luoj4@lsbu.ac.uk, Room J504)
Teaching Team & Contact Details (If applicable):	
Subject Area:	Life Sciences
Summary of Assessment Method:	Course work (online quizzes 25% + 1 ×1000 words essay 25%) + 1×2 hour written exam (50%))
External Examiner appointed for module:	

2. SHORT DESCRIPTION

This module will teach concepts and laws of physics that are fundamental for the understanding of human body systems. The module will also look at how these concepts and laws can be applied to develop medical technologies to examine and diagnose the function and disease of human body. Topics covered in this module include force, material, fluid, sound, electricity, optics, and radiation. The teaching of each topic will first be delivered through lectures to provide students with a firm understanding of the theory. Turtorial and workshops will be used to consolidate student's understanding of the theories, and also to develop student's ability and skill to apply these theories.

3. AIMS OF THE MODULE

1. To develop student's understanding of laws of physics that govern the function of human body
2. To develop student's understanding on how laws of physics can be used to develop medical technologies to diagnose, monitor, and treat diseases
3. To develop student's ability and skill on using laws of physics to analyse and explain the functioning of human body systems

4. LEARNING OUTCOMES

4.1 Knowledge and Understanding

Understand physical principles underlying human physiology and those on which medical technologies are based.

4.2 Intellectual Skills

Apply physical principles to analyse and explain the function of human body systems

4.3 Transferable Skills

Analytical skills, team work, written communication, numeracy

5. ASSESSMENT OF THE MODULE

Assessment Method:
This module is 50% coursework and 50% written exam.

Coursework (50%)

- Moodle quiz (25%) Submission deadline: defined period
- Essay (25%) Submission deadline: 27th Apr 2017

Written exam (50%)

Moodle quiz (20% module total)
An on-line Moodle quiz will run after each lecture. Each quiz has to be completed before the cut off/deadline to acquire a pass. They will NOT be accepted after this time.

6. FEEDBACK

Feedback will normally be given to students 15 working days after the final submission of an assignment or as advised by their module leader.

General feedback, applying to all students, will also be placed on the module VLE site within 15 working days.

7. INTRODUCTION TO STUDYING THE MODULE

7.1 Overview of the Main Content

The module will consist of lecture, tutorial, and workshop sessions on topics such as force and motion, materials and injury, fluids and circulation, sound, electricity, optics, and radiation

7.2 Overview of Types of Classes

Lectures, tutorials, workshops

7.3 Importance of Student Self-Managed Learning Time

Student responsibility in the learning and development process will be emphasised. Students are required to undertake directed self-study and prepare solutions/discussions to questions relative to various topic areas. Students must regularly access the Moodle site for this module. They should download the class/lecture material from the Moodle site, and do the recommended reading and tasks, before each lecture/class.
The programme of teaching, learning and assessment gives guidance on the textbook reading required for each week, the purpose of which is to encourage further reading both on and around the topic.

7.4 Employability

This course will prepare you for employment in public health, medical diagnostics, and healthcare.

8. THE PROGRAMME OF TEACHING, LEARNING AND ASSESSMENT

SEMESTER 2		
WEEK	TOPIC	READING (Core text - Physics in Biology and Medicine)
1	Introduction to the module; Kinematics	Chapter 3 and 4
2	Kinetics	Chapter 1 and 2
3	Mechanical properties of materials	Chapter 5
4	Fluid	Chapter 7 and 8
5	Waves and sound	Chapter 12
6	Clinical uses of sound + workshop	Chapter 12
7	Heat	Chapter 9, 10, and 11
8	Electricity	Chapter 13
9	Electrical technology + workshop	Chapter 14
10	Optics	Chapter 15
11	Atomic physics	Chapter 16
12	Neuclear medicine	Chapter 17
13	Summary and tutorial	

9. STUDENT EVALUATION

[Click and replace. A brief summary of the previous module cohort's evaluation and any changes made as a result.]

10. LEARNING RESOURCES

Reading List

https://lsbu.rl.talis.com/lists/891B7405-88BC-562C-D802-4307CC90CD95.html