

See the Code of Practice for Quality Assurance for Taught Programmes: Annex B before completing this template - available on <http://www.ukc.ac.uk/registry/quality/code2001/annexb.html> - and the relevant Faculty notes of guidance.

To use this template, download the file and insert text in the sections provided. You should consult your Department Director of Learning and Teaching when preparing a proposal. Directors of Learning and Teaching are required to sign off proposals before submission to the Faculty Learning and Teaching Committee. Please delete all the sections in italics before submission to the Faculty Officer.

- 1 The title of the module **Physiology (BI513)**
- 2 The Department which will be responsible for management of the module **Biosciences**
- 3 The Start Date of the Module **September 2004**
- 4 The number of students expected to take the module **150**
- 5 Modules to be withdrawn on the introduction of this proposed module and consultation with other relevant Departments and Faculties regarding the withdrawal **None**
- 6 The level of the module (eg Certificate [C], Intermediate [I], Honours [H] or Postgraduate [M])  
**Level I**
- 7 The number of credits which the module represents **15**  
*Note: undergraduate full-time students take modules amounting to 120 credits per year and postgraduate full-time students take modules amounting to 180 credits per year for a Masters award*
- 8 Which term(s) the module is to be taught in (or other teaching pattern) **Michaelmas and Lent.**
- 9 Prerequisite and co-requisite modules  
**BI305 Fundamental Human Biology for those students without Biology A level or equivalent, BI302 Molecular and Cellular Biology I and BI307 Human Physiology and Disease are strongly recommended.**
- 10 The programmes of study to which the module contributes  
**Biomedical Sciences, Biochemistry (with options), Biology, Forensic Biology, Forensic Science**
- 11 The intended subject specific learning outcomes and, as appropriate, their relationship to programme learning outcomes  
**On successful completion of the module the learning outcomes will enable the students to:**
  - 1. Demonstrate an understanding of the human organ systems, the levels of organisation of cells and tissues, and signalling pathways between, and within, physiological systems.**
  - 2. Describe in depth the key physiological components of nerve, muscle, blood, kidney, stomach and intestine, and of their interplay and relation to disease.**
  - 3. Have acquired practical and theoretical knowledge of physiological techniques, and practical writing skills.**
- 12 The intended generic learning outcomes and, as appropriate, their relationship to programme learning outcomes

1. Be able to extract and interpret information at an intermediate level.
2. Be able to analyse and evaluate data at an intermediate level.
3. Have acquired skills in written communication and receiving critique.

13 A synopsis of the curriculum

The aims of the module are to develop first year physiology towards a more detailed understanding of human physiology and particular physiological systems (*i.e.*, nervous system, muscles, blood, kidney, stomach and intestine). The students should be able to relate this understanding to relevant human disease processes, especially their aetiology and detection. The module will also introduce the place of research and laboratory methods in understanding human disease.

A lecture course will be as follows:

**A. (lectures 1-4) Physiological systems**

**Overview of Physiology**

**Cells and Tissues**

**Signalling pathways**

**Introduction to the Endocrine system**

**B. (lectures 5-9) Nervous System**

**Overview of anatomy of the nervous system: general organization, functional systems (motor, sensory, cognitive, autonomic etc)**

**Synaptic structure and function: transmitters and receptors**

**Sensory systems: vision and/or hearing and inherited/acquired sensory defects**

**C. (lectures 10-12) Muscle**

**Muscle types and muscle regulation**

**Cellular mechanisms of muscle function: contractile machinery (actin, myosin, etc), sliding filament theory**

**Motor systems: reflexes, voluntary movements, diseases of muscles and motorneurons**

**D. (lectures 13-18) Blood**

**Cardiovascular system: the heart and blood vessels**

**Hematopoiesis**

**Composition and functions of blood**

**Diseases of blood: cancers (leukaemia etc) anemias, thalassemia**

**E. (lectures 19-22) Kidney**

**Structure and functions of kidney**

**Filtration**

**Reabsorption**

**Secretion/excretion**

**F. (lectures 23-24) Gastro-intestinal (GI) physiology**

**The GI tract**

**Digestion and regulation of GI function**

The practical component of the module will include the following two sessions:

1. Skeletal muscle biomechanics, involving group work and data analysis.
2. Biochemical properties of blood cells and their relation to blood disorders.

The following two supervisions will also be included.

1. Effects of drugs on neurotransmission
2. Assessing a scientific paper relating to physiology

14 Indicative Reading List

**Core Text:**

**Silverthorn – *Human Physiology – An Integrated Approach*, Pearson Education. This text makes excellent linkage between physiological principles and medical case presentations, web support and a full CD-ROM CAL support package**

- 15 Learning and Teaching Methods, including the nature and number of contact hours and the total study hours which will be expected of students, and how these relate to achievement of the intended learning outcomes

**The total contact hours will be apportioned as follows:**

<b>Lectures:</b>	<b>24h</b>
<b>Practicals:</b>	<b>6h</b>
<b>Supervisions:</b>	<b>2h</b>
<b>Self study:</b>	<b>114h</b>

**The lectures and supervisions will support learning outcomes 1 & 2 with the supervisions allowing the students to consolidate lecture content and gain an understanding of both interpreting data and the applications of the knowledge learned. The practical aspects of the module will support learning outcome 3 and will allow the students to establish key experimental skills and gain an insight into detection of diseased states. The self study aspect of the module will include; preparation for practical classes and associated assessment; completing a report and background reading for the supervisions; revision of notes taken in lectures with further background reading, and preparation for the final examination associated with the module.**

- 16 Assessment methods and how these relate to testing achievement of the intended learning outcomes

**The course will be evaluated using practical reports (30%) plus a report for one supervision (10%) and by an end of year 2 hr long examination (essay and a multiple choice section, 60%). The practical reports will assess the attainment of learning outcomes 2&3. The students will demonstrate an understanding of the physiological process of muscle contraction and biomechanics, and the properties of blood cells and how these relate to disease. The supervisions will assess attainment of learning outcomes 1,2 and 3 as the students will be required to read and understand a scientific paper and complete an assessment involving research on the effects of drugs on neurotransmission. The end of year examination will assess all learning outcomes (although mainly 1&2) through multiple choice questions plus an essay style response.**

- 17 Implications for learning resources, including staff, library, IT and space


**This is a revision of a previous module and the only new resources that need to be considered are more text books in the library and consideration of teaching space for increased numbers.**

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- 18 A statement confirming that, as far as can be reasonably anticipated, the curriculum, learning and teaching methods and forms of assessment do not present any non-justifiable disadvantage to students with disabilities

**As far as can be reasonably anticipated, the curriculum, learning and teaching methods and forms of assessment do not present any non-justifiable disadvantage to students with disabilities**

**Statement by the Director of Learning and Teaching:** "I confirm I have been consulted on the above module proposal and have given advice on the correct procedures and required content of module proposals"

  
.....  
Director of Learning and Teaching

.....17.03.04.....  
Date

**Statement by the Head of Department:** "I confirm that the Department has approved the introduction of the module and will be responsible for its resourcing"

  
.....  
Head of Department

.....17/3/04.....  
Date