

Liverpool John Moores University

Title: PHYSIOLOGY OF THE ENDOCRINE AND NERVOUS SYSTEMS
Status: Definitive
Code: **5004BMBMOL** (101469)
Version Start Date: 01-08-2011

Owning School/Faculty: Pharmacy & Biomolecular Sciences
Teaching School/Faculty: Pharmacy & Biomolecular Sciences

Team	Leader
Steven Crosby	Y
Helen Burrell	
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Academic Level: FHEQ5 **Credit Value:** 12.00 **Total Delivered Hours:** 28.50
Total Learning Hours: 120 **Private Study:** 91

Delivery Options

Course typically offered: Semester 1

Component	Contact Hours
Lecture	21.000
Practical	6.000

Grading Basis: 40 %

Assessment Details

Category	Short Description	Description	Weighting (%)	Exam Duration
Exam	AS1	Essay style/interpretative questions.	60.0	1.50
Practice	AS2	Written practical reports.	40.0	

Aims

To provide a thorough understanding of the physiology of the major human endocrine systems and of the central, peripheral and autonomic nervous systems.

Learning Outcomes

After completing the module the student should be able to:

- 1 explain relationships between biochemical processes and physiological function.
- 2 explain the role of the endocrine system in the regulation of body function.
- 3 describe the physiological consequences of some endocrine abnormalities (e.g. diabetes).
- 4 discuss the integration of neural and humoral control of the human body.
- 5 describe the structure and function of the human nervous system.
- 6 compare the functions of the central, peripheral and autonomic nervous systems.
- 7 compare adrenergic and cholinergic neurotransmitter action.

Learning Outcomes of Assessments

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

EXAM	1	2	3	4	5	6	7
PRAC	2	3	5	6	7		

Outline Syllabus

Endocrine control of body functions. Hypothalamic releasing factors, anterior pituitary hormones. Regulation of the secretions of the hypothalamic, pituitary, adrenal, thyroid and gonadal axes. Regulation of growth. Control of blood glucose. Comparison of steroid and peptide hormone action. Neuroendocrine control mechanisms. Deficiency/excess diseases (as appropriate). The ionic basis of nervous activity. Conduction of action potentials. Structure and function of the human nervous system: central and peripheral. Voluntary nervous system. Morphology of synapses. Excitatory and inhibitory neurotransmission. Neuromuscular junction. Dopamine and GABA neurotransmission. Detailed structure and function of the autonomic nervous system. Sympathetic and parasympathetic systems: adrenergic and cholinergic neurotransmission. Regulatory functions of the autonomic nervous system. Organisation of the central nervous system. Functions of the sensory cortex and motor cortex. Neurotransmitters in the CNS. Skeletal muscle characteristics and function.

Learning Activities

The module will run on a single half-day in Semester 1. Most of the material will be delivered by lectures given by academic staff. Coursework will be delivered through 2 practical sessions (one computer based) linked to appropriate lecture material. Formative assessments using web-based material will be used where appropriate.

References

Course Material	Book
Author	Fox, S.I.
Publishing Year	2006
Title	Human Physiology
Subtitle	
Edition	9th Ed.
Publisher	McGraw Hill
ISBN	0073040762.

Course Material	Book
Author	Tortora, G.J.
Publishing Year	2002
Title	Principles of Anatomy and Physiology.
Subtitle	
Edition	10th ed.
Publisher	Wiley
ISBN	0471415014

Course Material	Book
Author	German W J, and Stanfield C L.
Publishing Year	2005
Title	Principles of human physiology
Subtitle	
Edition	2nd ed
Publisher	Pearson
ISBN	0321248546

Course Material	Book
Author	Silverthorn U G.
Publishing Year	2007
Title	Human Physiology
Subtitle	An integrated approach
Edition	
Publisher	Pearson
ISBN	0321396243

Notes

This module will provide students with a thorough and integrated understanding of the human endocrine and nervous systems.