

Liverpool John Moores University

Title: CONTROL AND PERCEPTION
Status: Definitive
Code: **5011NATSCI** (101258)
Version Start Date: 01-08-2014

Owning School/Faculty: Natural Sciences & Psychology
Teaching School/Faculty: Natural Sciences & Psychology

Team	Leader
Sally Williamson	Y
Robbie Rae	
Fatima Perez De Heredia Benedicte	
Francis McGlone	
Claudia Mettke-Hofmann	
Elaine Hemers	

Academic Level: FHEQ5 **Credit Value:** 24.00 **Total Delivered Hours:** 44.00

Total Learning Hours: 240 **Private Study:** 196

Delivery Options

Course typically offered: Standard Year Long

Component	Contact Hours
Lecture	31.000
Practical	10.000
Workshop	3.000

Grading Basis: 40 %

Assessment Details

Category	Short Description	Description	Weighting (%)	Exam Duration
Report	report	Coursework: practical report	34.0	
Presentation	poster	Coursework: practical poster	33.0	
Essay	essay	Coursework: essay	33.0	

Aims

To provide an introduction to the physiology of nervous and endocrine systems and how these systems influence how an organism senses and reacts to its environment

Learning Outcomes

After completing the module the student should be able to:

- 1 describe the functional properties of the nervous and endocrine systems and their components
- 2 explain the interaction between the nervous and endocrine systems and how both can influence behaviour
- 3 compare the sensory transduction mechanisms for different sensory systems
- 4 discuss the comparative strategies adopted by diverse animal species to detect sensory information

Learning Outcomes of Assessments

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

chemoreception report	1	2
poster about vision	3	
lit. review	3	4

Outline Syllabus

The structure, function and organization of the cellular components of nervous systems. The generation of electrochemical gradients across cell membranes. The transmission of membrane potentials along and between excitable cells. The voluntary and autonomic nervous system.

The roles and characteristics of the major classes of chemical messengers (paracrines, autocrines, hormones etc) with respect to the cell that releases them and the ways the messenger reaches the target cell. Interactions between the nervous and endocrine systems and the consequences of this on animal behaviour. The requirement for specialized sensory systems. The principles of energy transduction and the initiation of nerve impulses by sensory receptors. Adaptations for the detection of light, sound, smell and taste. How sensory systems affect animal behaviour. Advantages of different sensory systems in particular environments. The generation of circadian rhythms and seasonal behaviour.

Learning Activities

Lectures, workshops and practicals

References

Course Material	Book
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Author	Hill, R.W. et al.,
Publishing Year	2004
Title	Animal Physiology
Subtitle	
Edition	
Publisher	Sinauer Associates Inc.
ISBN	0878933158

Course Material	Book
Author	Moyes, C.D. & Schulte, P.M.
Publishing Year	2006
Title	Principles of Animal Physiology
Subtitle	
Edition	
Publisher	Pearson/ Benjamin Cummings
ISBN	0805353518

Course Material	Book
Author	Stanfield, C.L. & Germann, W.J.
Publishing Year	2008
Title	Principles of Human Physiology
Subtitle	
Edition	
Publisher	Pearson/ Benjamin Cummings
ISBN	

Course Material	Book
Author	Bradbury & Vehrencamp
Publishing Year	2011
Title	Principles of Animal Communication
Subtitle	
Edition	2nd
Publisher	Sinauer Associates
ISBN	9780878930456

Course Material	Book
Author	Simmons & Young
Publishing Year	2012
Title	Nerve Cells and Animal behaviour
Subtitle	
Edition	3rd
Publisher	Cambridge University Press
ISBN	9780521728485

Course Material	Book
Author	Land & Nilsson
Publishing Year	2012

Title	Animal Eyes
Subtitle	
Edition	2nd
Publisher	Oxford University Press
ISBN	9780199581146

Notes

The module provides an introduction to the physiology of both nervous and endocrine systems as well as the functioning of the sensory systems by which animals perceive and react to the outside world.