

Module Description for New Undergraduate Module¹

Module Code	PSU34620
Module Name	ADVANCED BIOPSYCHOLOGY
ECTS credit weighting	5 ECTS
Semester taught	Semester 2 (Hilary Term)
Module Coordinator/s	Professor Fiona Newell
<u>Module Learning Outcomes with embedded Graduate Attributes</u>	<p>On successful completion of this module, students should be able to:</p> <p>LO1. Demonstrate a broad understanding of how the brain gives rise to behaviour [TI, DC]</p> <p>LO2. Demonstrate understanding of important concepts, perspectives, and empirical findings linking brain and behaviour [TI, DC]</p> <p>LO3. Explain the neuroanatomy and development of human brain structures across the lifespan [CE, DC]</p> <p>LO4. Outline the steps involved in neural signalling including neurochemistry and effect of drugs on the brain [TI, DC, CE]</p> <p>LO5. Demonstrate understanding of sensation, action, motivated behaviour, and cognition - within the context of neuroscience and behaviour [TI, DC]</p> <p>LO6. Use research to evaluate recent evidence linking microbiome to brain and behaviour [TI, DC]</p> <p>LO7. Demonstrate understanding of the biological basis of regulatory behaviour [CE, DC].</p> <p>LO8. Report on observations of biorhythms and implement knowledge to provide theoretical insights into behaviour [TI, CE].</p> <p>LO9. Evaluate role of physiological basis of brain disorders and trauma on behaviour [TI, DC, AR].</p>
Module Content	<p>Biopsychology is the study of the biological basis of behaviour. In this course, students discover connections among psychology and biology, neuroscience, pharmacology, and endocrinology. Lectures cover the structure, function, and development of the human nervous system and how this system can give rise to basic sensory, motor, cognitive, and regulatory processes that characterize human behaviour. The content will also include discussions on the role of hormones and microbiome on brain function and behaviour. This course will refer to examples of the effects of brain damage and nervous system disorders to provide insight into how pathological thoughts and behaviours are rooted in physiological causes.</p>

¹ [An Introduction to Module Design](#) from AISHE provides information on designing and re-designing modules.

Additionally, students develop a basic understanding of the methods used in biopsychology and evaluate the contributions as well as limitations of these approaches.

Students can expect the following content across the lectures in this module:

1. Neuroanatomy and neurophysiological processes in the brain
2. Neurotransmitters and drugs
3. The evolution of the brain and behaviour
4. The development of the brain
5. Hormones and the brain
6. Homeostasis: brain mechanisms and regulatory behaviour
7. Biological rhythms and sleep
8. Principles of sensory processing in the brain
9. Brain basis of major sensory systems and their interactions
10. The gut and brain function
11. Psychopathology and mental disorders

Teaching and Learning Methods²

- This course is a lecture/discussion course, with in-class activities. Readings from a recommended textbook are assigned to provide students with an overview of the topic. In addition, primary source literature will be provided, the reading of which is designed to support depth of understanding on specific topics. Lectures provide context, focus on topics of interest in-depth, discuss topics not included in the readings, and provide additional detail and explanations, including demonstrations and videos. Students will benefit most by following along with the course and asking questions during lecture or offline. There will be time specifically set aside for discussions.

Assessment Details³

Please include the following:

- **Assessment Component**
- **Assessment description**
- **Learning Outcome(s) addressed**
- **% of total**
- **Assessment due date**

It is recommended that module co-ordinators consider assessment types used across

Assessment Component	Assessment Description	LO Addressed	% of total	Week due
Quiz	Four short quizzes (take-home, mcq) will be administered during the course (5% each). Each quiz will be timed and open-book.	LO1-5	20%	3, 5, 7, 9
Coursework	A single homework assignment based on circadian rhythms.	LO1, 2, 5	20%	6

² [Trinity-INC](#) provides tips and resources on how to make your curriculum more inclusive.

³ <https://www.tcd.ie/academicpractice/resources/assessment/>

the year to ensure varied assessment methods.	Exam	Knowledge of the content of the course, including conceptual and theoretical approaches, will be assessed by an in-person, written (closed-book) exam. This exam will be 2-hours, taken during exam week.	LO1-5	60%	TBC

Reassessment Requirements 100% exam based only.

Contact Hours and Indicative Student Workload⁴	Contact hours: 11
	Independent Study (preparation for course and review of materials): 22
	Independent Study (preparation for assessment, incl. completion of assessment): 80

Indicative Reading List (approx. 4-5 titles)

Core text-book: Behavioural Neuroscience (10th edition) by Breedlove & Watson, 2023, Sinauer (Oxford University Press), (ISBN: 9780197616857)

Other primary source materials (e.g. review articles) will be announced in class and will be available as pdfs on the course website. Other materials such as videos or demos will be made available on Blackboard for each week.

Links for further (optional) readings may also be provided on lecture slides.

Module Pre-requisite Cognate foundation module in Perception or Sensory Neuroscience

Module Co-requisite

Module Website

Are other Schools/Departments involved in the delivery of this module? If yes, please provide details. No

⁴ https://www.tcd.ie/academicpractice/resources/assessment_workload/

