

Module Title and Code**PS3458****Preclinical and Clinical Models of Neuropsychiatric and Neurological Disorders****Lecturer(s)**

Prof Shane O'Mara

Contact Hours

One semester: 11 lectures; 114 hours independent study

ECTS Value

5 ECTS (=125 student hours)

Rationale and Aims

Neuropsychiatric and neurological disorders are widespread and disabling conditions in society, compromising individual quality of life and diminishing productive potential while placing a great strain on health-care systems and care-givers. This course examines a number of these disorders, and places a particular focus on the translation of basic neuroscience to clinical disorders, and vice versa.

This module provides students with an understanding of neuropsychiatric and neurological disorders, particularly in terms of their interrelatedness with neurocognitive function and their modelling by preclinical animal models. A particular focus will be on current and developing neurotherapeutic strategies (from molecular to behavioural to assistive/invasive technology approaches). Advances in technologies to model, probe and support nervous system function will be a key feature too, whether from a behavioural, pharmacological and/or neural prosthetic perspective.

For whom is the module intended?

Psychology Sophister SH/TSM students and Higher Diploma in Psychology Year 2 students

How does it fit in to the academic programme?

This module provides advanced coverage of material in some of the essential aspects of the discipline of psychology and is required to be covered by the professional accreditation body, Psychological Society of Ireland.

Is it mandatory or optional?

Optional

Are there prerequisites?

Cognate foundation module.

From a teaching point of view, what are the intentions of the lecturer?

To provide students with an in-depth understanding of the neuropsychiatric and neurological disorders: how they may occur, the burden they impose, how they are studied and modelled, and how they might be ameliorated.

Course Content

1. Basics: Neural Plasticity, Imaging, Preclinical and Clinical Models; Translational Neuroscience
2. Brain Ageing and Alzheimer's Disease
3. Amnesic Disorders (organic disorders of memory; disconnection syndromes)

4. Parkinson's Disease and Brain Stimulation
5. Affective Disorders: Depression, Stress, Fear and Anxiety
6. Addiction
7. Control of Appetite: Anorexia and Obesity
8. Traumatic Brain Injury
9. Down's Syndrome
10. Schizophrenia and Epilepsy
11. Applied Neuroscience: Torture and the Brain

Indicative Resources

Required text(s)

As this is an advanced sophister research-led taught module, state-of-the-art and up-to-date journal articles from the relevant research literature will be made available throughout the module.

Learning Outcomes

On successful completion of this course, students will be able to:

- understand the structure and functions of the nervous system [PO2];
- discuss principles, models and theories of nervous system and apply them to understanding neuropsychiatric and neurological disorders [PO2,4];
- describe and evaluate models of neuropsychiatric and neurological disorders [PO2,4];
- evaluate the relationship between neuropsychiatric and neurological disorders and other more general neurocognitive function [PO1,2];
- evaluate what disorders and disruptions reveal about neuropsychological function [PO 2,4];
- understand the principles and methods involved in doing research in the area [PO1,2,6].

Methods of Teaching and Student Learning

The format of lectures is conventional but students are encouraged to ask questions and to engage the lecturer in discussion where practicable. Both the reduced numbers in these optional modules and the fact that the module is based in the lecturer's own area of research expertise and interest facilitates increased class discussion and debate.

Inclusive curriculum: Each lecture and any supporting and accompanying documentation is posted on our school website to facilitate independent study and self-paced learning.

Methods of Assessment

This module is assessed by continuous assessment of one essay (2,500 words, 32%) and one written examination (68%) in the annual session. The exam is 2hours 30 minutes in duration and students are required to answer two questions discursively.

It is expected that:

- (i) a range of areas should be covered in addressing each question. A poor mark will be awarded to essays/answers that do not integrate a majority of the relevant topics covered in the lectures; and
- (ii) responses should be critical, original and synthetic and should be based on reading beyond the lecture notes.

Students are given very detailed guidelines in their handbook as to grading criteria for degree classes.

Evaluation

All modules are evaluated by students by means of CAPSL survey requested by the School and all feedback is noted and incorporated in module design where appropriate for delivery of the module in subsequent years.

Feedback is also delivered via student representatives at the School's once a term staff-student meetings, at School Committee meetings and at the Committee for Undergraduate Teaching & Learning meetings.