

Module specification

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Module Code	PSYON724
Module Title	Techniques in Neuroscience
Level	7
Credit value	15
Faculty	FSLS
HECoS Code	100497
Cost Code	GAPS
Pre-requisite module	N/A

Programmes in which module to be offered

Programme title	Core/Optional/Standalone
MSc Psychology	Core

Breakdown of module hours

Learning and teaching hours	15 hrs
Placement tutor support hours	0 hrs
Supervised learning hours e.g. practical classes, workshops	0 hrs
Project supervision hours	0 hrs
Active learning and teaching hours total	15 hrs
Placement hours	0 hrs
Guided independent study hours	135 hrs
Module duration (Total hours)	150 hrs

Module aims

The aim of this module is to provide an overview of contemporary emerging technologies and techniques applied within psychological research. The focus is on providing students with knowledge regarding the advantages and disadvantages of these contemporary techniques, and their pragmatic and practical application.

Module Learning Outcomes

At the end of this module, students will be able to:



1	Critically evaluate a range of advanced research technologies in the context of psychological research
2	Apply knowledge of neuroscience technologies to inform and enhance cognitive neuroscience research questions
3	Evaluate the role of emerging technologies and what they can add to our understanding of human psychology

Assessment

Indicative Assessment Tasks:

This section outlines the type of assessment task the student will be expected to complete as part of the module. More details will be made available in the relevant academic year module handbook.

1. 1500-word critical appraisal of a peer reviewed Journal utilising various contemporary techniques
2. Poster presentation (15 mins) of a proposed research study.

Assessment number	Learning Outcomes to be met	Type of assessment	Duration/Word Count	Weighting (%)	Alternative assessment, if applicable
1	1,3	Written Assignment	1500	50%	NA
2	2	Presentation	15 minutes	50%	NA

Derogations

The minimum mark you need achieve for each module will be one of the following:

- 50%.
- A pass grade (normally only in place where an assessment is competency-based)

Learning and Teaching Strategies

The overall learning and teaching strategy will include adherence to the asynchronous elements of Active Learning Framework via a series of micro-lectures, directed reading and activities. There will be a mix of supporting materials along with directed study for students to complete as they work through the material and undertake the assessment tasks. The use of a range of digital tools within the virtual learning environment together with additional sources of reading will also be utilised to promote breadth and depth of learning.

Welsh Elements

In line with the University's Welsh Medium Scheme, students will be offered the opportunity to submit assessments through the medium of Welsh. This will be drawn to the attention of students through the student handbook.

For those students wishing to engage with the subject area via the medium of Welsh, additional resources will be made available via www.porth.ac.uk, which is the Coleg Cymraeg Cenedlaethol resource portal

Indicative Syllabus Outline

- Cognitive Science Research Traditions
- Electroencephalography (EEG) & Event-related potentials (ERP)
- Magnetoencephalography (MEG)
- Functional Magnetic Resonance Imaging (fMRI)
- Connectomics
- Near-Infrared Optical Imaging (fNIRI)
- Non-invasive brain stimulation

Indicative Bibliography:

Please note the essential reads and other indicative reading are subject to annual review and update.

Essential Reads

Newman, A. (2019). *Research Methods for Cognitive Neuroscience*. SAGE publications.

Indicative journals

- Journal of Neuroscience
- Frontiers in Neuroscience
- Brain Stimulation
- NeuroImage
- Trends in Cognitive Sciences
- Journal of Neuroscience Methods
- Experimental Brain Research

Administrative Information

For office use only	
Initial approval date	June 2026
With effect from date	September 2026
Date and details of revision	
Version number	1