

# University of Reading

## Modules

# PYMPBC1-Programming for Behavioural and Cognitive Neurosciences

**Module Provider:** Psychology

**Number of credits:** 20 [10 ECTS credits]

**Level:** 7

**Terms in which taught:** Spring term module

**Pre-requisites:**

**Non-modular pre-requisites:** Graduate level quantitative skills relevant to Psychology and familiarity with computers

**Co-requisites:**

**Modules excluded:**

**Current from:** 2022/3

**Module Convenor:** Dr Peter Scarfe

**Email:** [p.scarfe@reading.ac.uk](mailto:p.scarfe@reading.ac.uk)

**Type of module:**

**Summary module description:**

Being able to program experiments and understand experimental design in an essential component of doing scientific research in Behavioural and Cognitive Neuroscience. This course will introduce you to programming and experimental design in Matlab, with the Psychtoolbox and Palamedes packages. The primary focus will be on Matlab as this is one of the most widely used programming languages in Psychology and Cognitive Neuroscience.

**Aims:**

The module will introduce students to basic programming skills necessary to design psychology experiments and analyse data through a set of seminars and hands-on practical sessions.

**Assessable learning outcomes:**

By the end of the course students will:

1. Be able to efficiently use and navigate the Matlab programming environments.
2. Have a clear understanding of the tasks, measures and methods used for research in Behavioural and Cognitive Neuroscience
3. Have good working knowledge of how to construct experiments in Matlab

4. Have a good working knowledge of how to analyse experimental data in Matlab.

**Additional outcomes:**

It is anticipated that this module will inform much subsequent work by students on postgraduate courses in psychology and related disciplines. Programming skills are highly transferable, and hence will benefit students in any future profession that involves using a quantitative/ analytic approach.

**Outline content:**

The course will consist of nine three-hour sessions.

**Session 1:** Introduction to Experimental Design and Programming

**Session 2:** Introduction to programming in Matlab #1

**Session 3:** Introduction to programming with Matlab #2

**Session 4:** Programming Experiments with Matlab and Psychtoolbox #1

**Session 5:** Programming Experiments with Matlab and Psychtoolbox #2

**Session 6:** Programming Experiments with Matlab and Psychtoolbox #3

**Session 7:** Analysing data with Matlab and Palamedes #1

**Session 8:** Analysing data with Matlab and Palamedes #2

**Session 9:** In-class test

**Brief description of teaching and learning methods:**

This module will be taught through a mix of plenary lectures to introduce specific topics, and accompanying practical work to provide hands-on training.

**Contact hours:**

**Course hours:**

	<b>Autumn</b>	<b>Spring</b>	<b>Summer</b>
Practicals classes and workshops		24	
Guided independent study:		176	
Total hours by term		200	
Total hours for module	200		

**Summative Assessment Methods:**

<b>Method</b>	<b>Percentage</b>
Practical skills assessment	70
Class test administered by School	30

**Summative assessment- Examinations:****Summative assessment- Coursework and in-class tests:**

Three hour in class test in final seminar.

Homework will be set at the end of Sessions 2-8 and will be handed in at the beginning of the next session.

**Formative assessment methods:**

Assessment will be 70% continuous (7 homework's each worth 10%) and 30% final exam.

Homework will be set at the end of Sessions 2-8 and will be handed in at the beginning of the next session

**Penalties for late submission:**

The below information applies to students on taught programmes except those on Postgraduate Flexible programmes. Penalties for late submission, and the associated procedures, which apply to Postgraduate Flexible programmes are specified in the policy "Penalties for late submission for Postgraduate Flexible programmes", which can be found here: <https://www.reading.ac.uk/cqsd/-/media/project/functions/cqsd/documents/cqsd-old-site-documents/penaltiesforlatesubmissionpgflexible.pdf>

The Support Centres will apply the following penalties for work submitted late:

where the piece of work is submitted after the original deadline (or any formally agreed extension to the deadline): 10% of the total marks available for that piece of work will be deducted from the mark for each working day (or part thereof) following the deadline up to a total of five working days;

where the piece of work is submitted more than five working days after the original deadline (or

any formally agreed extension to the deadline): a mark of zero will be recorded.

The University policy statement on penalties for late submission can be found at:

<https://www.reading.ac.uk/cqsd/-/media/project/functions/cqsd/documents/cqsd-old-site-documents/penaltiesforlatesubmission.pdf>

You are strongly advised to ensure that coursework is submitted by the relevant deadline. You should note that it is advisable to submit work in an unfinished state rather than to fail to submit any work.

#### **Assessment requirements for a pass:**

50% overall

#### **Reassessment arrangements:**

If a student fails the assignment, an alternative, equivalent assignment can be submitted. The assignment and date of submission will be by arrangement with the Module Convenor and/or Programme Director. Students should note however that, given the University regulations on failing credits, it may not be in their interests to resubmit the coursework.

#### **Additional Costs (specified where applicable):**

- 1) Required text books: None
- 2) Specialist equipment or materials: None
- 3) Specialist clothing, footwear or headgear: None
- 4) Printing and binding: None
- 5) Computers and devices with a particular specification: None
- 6) Travel, accommodation and subsistence: None

**Last updated:** 22 September 2022

**THE INFORMATION CONTAINED IN THIS MODULE DESCRIPTION DOES NOT FORM ANY PART OF A STUDENT'S CONTRACT.**

### **Things to do now**

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