PS904-15 Practical Research Skills for Psychology

20/21

Department
　　Psychology
Level
　　Research Postgraduate Level
Module leader
　　Derrick Watson
Credit value
　　15
Module duration
　　9 weeks
Assessment
　　100% coursework
Study location
　　University of Warwick main campus, Coventry

Description

Introductory description

The overall aim of this module is to provide advanced training in methods for studying human behaviour.

Module aims

The main themes are computer programming for designing and analyzing experiments, eye movement measurement and analysis, measuring and analysing physiological variables (e.g., EDA, HRV, facial EMG) and an introduction to basic imaging techniques. No prior computer programming knowledge is assumed. The training is delivered via a combination of lecture / practical sessions and homework programming exercises.

Outline syllabus

This is an indicative module outline only to give an indication of the sort of topics that may be covered. Actual sessions held may differ.

- Computer programming 1: Introduction, variables and data types

- Computer programming 2: Variables II, program flow and control
- Computer programming 3: Programming structure, procedures and functions
- Computer programming 4: 2D graphics
- Computer programming 5: 3D graphics
- Eye movement research, measurement and analysis
- Basic physiological measurement: Electrodermal Activity, HR, temperature and fEMG
- EDA and Driving simulation
- Introduction to imaging techniques

Learning outcomes

By the end of the module, students should be able to:

- - Evaluate and critique the appropriateness of key experimental methods available for assessing human performance.
- - Design and implement advanced and novel console, 2D and 3D computer programmes for PC, Mac and Linux based systems.
- - Analyse and debug computer code (emphasis on Blitzmax but application to other languages).
- - Identify and critically evaluate when physiological measures are appropriate in psychological research.
- - Identify and evaluate the most appropriate analysis techniques for eye-movement and physiological measures of human behaviour.

Indicative reading list

Blitzmax programming language, tutorials and resources: https://blitzmax.org/
Boucsein, W. (2012). Electrodermal Activity. Spring.
Fisher, D.L., Rizzo, M., Caird, J., & Lee, J.D. (2017). Handbook of Driving Simulation for Engineering, Medicine, and Psychology. CRC Press.
Rayner, K. (1998). Eye movements in reading and information processing: 20 years of research. Psychological Bulletin, 124, 372-422.
For extending what you learn to other languages (Python and Javascript) please see:
Hall, T., & Stacey, J.P. (2009). Python 3 for absolute beginners. Springer
Langtangen, H.P. (2009). Python scripting for computational science. Springer
McNavage, T. (2010). Javascript for absolute beginners. Springer

[View reading list on Talis Aspire](#)

Subject specific skills

Understanding of experimental methods
Experience of programming of 2D and 3D models
Understanding of computer coding

Transferable skills

Critical evaluation
Understanding of analytical techniques
Programming skills

Study

Study time

Type	Required
Lectures	9 sessions of 1 hour (6%)
Practical classes	9 sessions of 1 hour (6%)
Private study	132 hours (88%)
Total	150 hours

Private study description

132 hours of study and preparation for assessment

Costs

No further costs have been identified for this module.

Assessment

You do not need to pass all assessment components to pass the module.

Students can register for this module without taking any assessment.

Assessment group A2

	Weighting	Study time
Practical report 1	50%	
Programming Assignment. Up to 4,000 words		
Practical Report 2	50%	
Critical evaluation assignment. Up to 4,000 words		

Feedback on assessment

Formative feedback: during practical sessions/lab follow-up sessions. Summative feedback: written feedback and comments on practical reports.

Availability

Courses

This module is Optional for:

- TPSS-C8P9 Postgraduate Taught Psychological Research
  - Year 1 of C8P9 Psychological Research
  - Year 1 of C8P9 Psychological Research