

Liverpool John Moores University

Title: RESEARCH METHODS IN PSYCHOPHYSIOLOGY
Status: Definitive
Code: **5010PSYSCI** (113654)
Version Start Date: 01-08-2011

Owning School/Faculty: Natural Sciences & Psychology
Teaching School/Faculty: Natural Sciences & Psychology

Team	Leader
Yvonne Harrison	Y

Academic Level: FHEQ5
Credit Value: 24.00
Total Delivered Hours: 78.50
Total Learning Hours: 240
Private Study: 161

Delivery Options

Course typically offered: Standard Year Long

Component	Contact Hours
Lecture	34.000
Tutorial	20.000
Workshop	23.000

Grading Basis: 40 %

Assessment Details

Category	Short Description	Description	Weighting (%)	Exam Duration
Exam	AS1	exam	30.0	1.50
Report	AS3	1500 word quantitative report	30.0	
Report	AS4	1500 word qualitative report	30.0	
Report	AS2	project proposal coursework	10.0	

Aims

1. To examine the rationale and use of quantitative and qualitative research methods, with a particular emphasis on psychophysiological research topics.
2. To explore limitations and advantages of a range of experimental designs and protocols.
3. To demonstrate and allow practical experience of a range of psychophysiological

measurement techniques.

4. To provide an understanding of the application of statistical techniques in psychology, using a range of examples and including practical applications of analysis of variance, multiple regression etc.

5. To enable students to obtain practical experience of designing and conducting studies, both individually and in groups.

Learning Outcomes

After completing the module the student should be able to:

- 1 Discuss and critically evaluate the rationale and appropriateness of quantitative and qualitative methods in psychological research.
- 2 Design, conduct and report research using qualitative and quantitative methods of data generation.
- 3 Apply appropriate statistical techniques for the analysis of a diverse range of data sets.
- 4 Demonstrate an awareness of current issues in psychophysiological research.
- 5 Collect physiological data using a range of laboratory equipment.
- 6 Formulate a research hypothesis based on familiarity with research literature.

Learning Outcomes of Assessments

The assessment item list is assessed via the learning outcomes listed:

EXAM	1	3	4			
quant	1	2	3	4	5	6
qual	1	2	3	4	5	6
proposal	4	6				

Outline Syllabus

Weekly 2 hr lectures will cover basic principles of experimental design, statistical analysis and current topics in psychophysiology e.g. emotion physiology, exercise and cognitive psychophysiology. The course will initially focus on the use of parametric data analysis and will cover the inferential argument, ethical issues, risk assessment, validity and reliability, independent and repeated measures design, factors, levels and interactions. Students will also attend practical workshops aimed at providing hands-on experience of a range of psychophysiological measurement techniques and instrumentation. During practical sessions students will run through exercises to enable an appreciation of electroencephalography (EEG), facial electromyography (EMG), eye movements, heart rate, skin conductance, conditioning, habituation, biofeedback etc. By week 6 students will be prepared to design and execute an experimental project of their own design. This will cover at least two factors and will allow analysis of potential interaction. The experiment will focus on issues relevant to psychophysiology. At the end of week 6 students will

submit a project proposal (max 500 words) outlining rationale, design, outcome measures etc. Feedback will be given prior to data collection in order to suggest necessary modifications. The second half of Semester 1 will be dedicated to data collection and analysis. Students will organise their own trial schedule and will liaise with technical staff for the use of equipment and laboratories. During this period three computer based data analysis sessions will be conducted. In Semester 2 students will attend 5 weekly lectures and 5 weekly small group workshops covering qualitative research methodology. These activities will prepare the student for a second project using the techniques covered in the lectures. Project supervision will be provided with the eventual submission of a practical proposal and final report due in towards the end of the semester.

Learning Activities

1. Lectures 2.Laboratory and computer workshops 3. Project tutorials 4. Private study

References

Course Material	Book
Author	Toates, F
Publishing Year	2004
Title	Biological Psychology
Subtitle	
Edition	
Publisher	Pearson Prentice Hall
ISBN	

Course Material	Book
Author	Leedy, P.D
Publishing Year	2005
Title	Practical Research
Subtitle	Planning and Design
Edition	
Publisher	Pearson, Merrill, Prentice Hall
ISBN	

Course Material	Book
Author	Coleman, A.M.
Publishing Year	1995
Title	Psychological Research Methods and Statistics
Subtitle	
Edition	
Publisher	Longman Essential Psychology
ISBN	

Notes

This module builds on the subject material introduced in level 1 and develops knowledge in the area of experimental design and statistical analysis using both quantitative and qualitative methods of research investigation. Students are also introduced to current ideas, protocols and instrumentation used in psychophysiological research and are encouraged to pursue their own research in a related area.