

**DEREE COLLEGE SYLLABUS FOR:  
PS 3734 EXPERIMENTAL COGNITIVE PSYCHOLOGY**

**3/2/4**

(Updated Spring 2022)

**LEVEL 5  
UK CREDITS: 20**

**PREREQUISITES:**

PS 1000 Psychology as a Natural Science- L4  
PS 1001 Psychology as a Social Science – L4  
PS 2207 Infancy and Preschool Years – L4  
PS 2236 Human Learning & Memory – L4  
PS 2260 Introduction to Statistical Thinking – L4  
PS 2347 Analysis of Quantitative Data – L4  
PS 3618 Nonexperimental Methods in Psychology – L5

**CATALOG  
DESCRIPTION:**

Methods and concepts of experimental cognitive psychology. Principles of experimental design through a description of different types of experimental investigations. Collection, design, and analysis, of experiments in psychology. Scientific report writing.

**RATIONALE:**

This module builds upon the knowledge acquired in earlier modules and goes in depth in designing, running, analyzing, and writing up experiments, with an emphasis on the core area of cognitive psychology. It enhances critical thinking, a necessary skill for all psychology students.

**LEARNING OUTCOMES:**

Upon completion of this module, the student should be able to:

1. Distinguish between experimental methods and major experimental designs and apply them appropriately.
2. Generate new research hypotheses and identify appropriate research designs to test them.
3. Demonstrate a deep understanding of different types of experimental and quasi-experimental designs and apply advanced statistical techniques.
4. Develop a critical evaluation and interpretation of research findings, while applying APA ethical and stylistic guidelines in research.

**METHOD OF TEACHING AND  
LEARNING:**

In line with the teaching and learning strategy of the college, the following tools are used:

- Classes consist of lectures and critical discussions of published research.
- Individual designing of experiments using appropriate software, conducting the experiments using human participants, analysing obtained data and writing of experimental reports. Practical laboratory exercises using SPSS.
- Individual tutorial time, supervising all steps of the research paper.
- Office hours
- Use of Blackboard site

<p><b>ASSESSMENT:</b></p>	<p><b>Summative:</b></p> <table border="1" data-bbox="688 226 1430 569"> <tr> <td data-bbox="688 226 1252 300"><b>1<sup>st</sup> assessment: Examination</b></td> <td data-bbox="1252 226 1430 300"><b>30%</b></td> </tr> <tr> <td data-bbox="688 300 1252 373"><b>2nd assessment: Application Assignments</b></td> <td data-bbox="1252 300 1430 373"><b>10%</b></td> </tr> <tr> <td data-bbox="688 373 1252 569"> <b>Final Assessment: Portfolio</b> <ul style="list-style-type: none"> <li>• Research Paper (50%): Literature review/design/participants' recruitment/analysis and presentation of results.</li> <li>• Quizzes (10%)</li> </ul> </td> <td data-bbox="1252 373 1430 569"><b>60%</b></td> </tr> </table> <p>The 1st assessment tests Learning Outcomes: 1,2.  The 2<sup>nd</sup> assessment tests Learning Outcome1,2,3,4.  The final assessment tests Learning Outcomes 1,2,3,4.</p> <p>The final grade for this module will be determined by averaging all summative (major) assessment grades, based on predetermined weights for each assessment. If students pass the comprehensive assessment that tests all Learning Outcomes for this module and the average grade for the module is above 40, students are not required to resit any failed assessments</p>	<b>1<sup>st</sup> assessment: Examination</b>	<b>30%</b>	<b>2nd assessment: Application Assignments</b>	<b>10%</b>	<b>Final Assessment: Portfolio</b> <ul style="list-style-type: none"> <li>• Research Paper (50%): Literature review/design/participants' recruitment/analysis and presentation of results.</li> <li>• Quizzes (10%)</li> </ul>	<b>60%</b>
<b>1<sup>st</sup> assessment: Examination</b>	<b>30%</b>						
<b>2nd assessment: Application Assignments</b>	<b>10%</b>						
<b>Final Assessment: Portfolio</b> <ul style="list-style-type: none"> <li>• Research Paper (50%): Literature review/design/participants' recruitment/analysis and presentation of results.</li> <li>• Quizzes (10%)</li> </ul>	<b>60%</b>						
<p><b>INDICATIVE READING:</b></p>	<p><b>REQUIRED READING:</b></p> <p>Matthew J. C. Crump, Paul C. Price, Rajiv Jhangiani, I-Chant A. Chiang, Dana C. Leighton (2017). <i>Research Methods for Psychology</i>  Last Compiled: 2018-07-23  <a href="https://crumplab.github.io/ResearchMethods/">https://crumplab.github.io/ResearchMethods/</a></p> <p>Kantowitz, B.H., Roediger III, H.L., &amp; Elmes, D.G. (2015) <i>Experimental Psychology Cengage</i>, 10th Edition</p> <p><b>RECOMMENDED READING:</b></p> <p>American Psychological Association. (2009). <i>Publication manual of the American psychological association</i> (6<sup>th</sup> Edition). Washington, DC: American Psychological Association.</p> <p>Beins, B. C., &amp; Beins, A. M. (2008). <i>Effective writing in psychology: Papers, posters, and presentations</i>. Malden, MA: Blackwell Publishing.</p> <p>De Abreu, P. M. E., Baldassi, M., Puglisi, M. L., &amp; Befi-Lopes, D. M. (2013). Cross-linguistic and cross-cultural effects on verbal working memory and vocabulary: Testing language-minority children with an immigrant background. <i>Journal of Speech, Language, and Hearing Research</i>, 56 (2), 630-642.  <a href="https://doi.org/10.1044/1092-4388(2012/12-0079)">https://doi.org/10.1044/1092-4388(2012/12-0079)</a></p>						

	<p>Field, A., &amp; Hole, G. (2004). <i>How to design and report experiments</i>. Sage Publications</p> <p>Harris, P. (2008). <i>Designing and reporting Experiments in Psychology</i> (3<sup>rd</sup> Edition). Open University Press.</p> <p>Imbo, I., &amp; LeFevre, J. A. (2009). Cultural differences in complex addition: efficient Chinese versus adaptive Belgians and Canadians. <i>Journal of Experimental Psychology: Learning, Memory, and Cognition</i>, 35(6), 1465.</p> <p>Martin, D. W. (2008). <i>Doing psychology experiments</i>. Belmont, CA: Thomson-Wadsworth.</p> <p>Pallant J. <i>SPSS Survival Manual</i> (2<sup>nd</sup> Edition). McGrawHill.</p> <p>Pelham, B, &amp; Blanton, H. <i>Conducting Research in Psychology: Measuring the Weight of Smoke</i> (4<sup>th</sup> Edition). Cengage Learning.</p> <p>Rindermann, H., Ackermann, A. L., &amp; Te Nijenhuis, J. (2020). Does Blindness Boost Working Memory? A Natural Experiment and Cross-Cultural Study. <i>Frontiers in psychology</i>, 11, 1571.</p> <p>Stern, L. (2007). <i>What every student should know about avoiding plagiarism</i>. New York: Pearson Education, Inc.</p>
<p><b>INDICATIVE MATERIAL:</b> (e.g. audiovisual, digital material, etc.)</p>	<p><b>REQUIRED MATERIAL:</b> N/A</p> <p><b>RECOMMENDED MATERIAL:</b> The Psychologist British Journal of Psychology The Quarterly Journal of Experimental Psychology Experimental Psychology American Psychologist Experimental Psychology: Learning, Memory &amp; Cognition</p>
<p><b>COMMUNICATION REQUIREMENTS:</b></p>	<p>Paper submitted in MS Word format. Academic use of English, both oral and written. APA style</p>
<p><b>SOFTWARE REQUIREMENTS:</b></p>	<p>Microsoft Office: Word, Excel, PowerPoint SPSS E-Prime PsychStudio Super Lab Wandsworth CogLab Open Sesame</p>
<p><b>HARDWARE REQUIREMENTS:</b></p>	<p>Tobii Eye Tracking X2-60 Compact Cedrus Smart Voice Key and I/O SV1 Cedrus USB Response Pad RB-740 Mindray Vital Signs Monitor VS-800 Auto-Inflate Digital Blood Pressure Monitor FS-40</p>

	<p>Bosch-Sohn Blood Pressure Unit D-72417  Mindfield E-Sense Skin Response (GSR)  Biosignal Flux Researcher Kit (Biofeedback Data Collection)</p>
<p><b>WWW RESOURCES:</b></p>	<p>APA electronic style guide:  <a href="http://www.docstyles.com/apaquick.htm">www.docstyles.com/apaquick.htm</a></p> <p>American Psychological Association:  <a href="http://www.apa.org">www.apa.org</a></p> <p>British Psychological Society:  <a href="http://www.bps.org">www.bps.org</a></p> <p>Wadsworth Higher Education Learning:  <a href="http://www.wadsworth.com">www.wadsworth.com</a>  The Purdue Online Writing Lab:  <a href="http://owl.english.purdue.edu">owl.english.purdue.edu</a></p> <p>Writing Research Reports:  <a href="http://methods.fullerton.edu/appa.html">methods.fullerton.edu/appa.html</a></p>
<p><b>INDICATIVE CONTENT:</b></p>	<p><b>I. Lecture</b></p> <ol style="list-style-type: none"> <li>1. Experimental Psychology and the Scientific Method</li> <li>2. Research Ethics</li> <li>3. Writing the Research Report</li> <li>4. Formulating Hypothesis and the Basics of Experimentation</li> <li>5. Basic Between- and Within-Subjects Designs</li> <li>6. Factorial, repeated measures and mixed designs</li> <li>7. Applications of experimental psychology</li> <li>8. The need of statistics, analyzing results, and drawing conclusions</li> </ol> <p><b>II. Laboratory</b></p> <ol style="list-style-type: none"> <li>1. Individual projects will be selected from one or more of the cognitive areas in psychology (such as memory, thinking, problem solving, attention, and social cognition).</li> <li>2. Practical application of SPSS in the research process.</li> </ol>