

**DEREE COLLEGE SYLLABUS FOR:
PS 2347 ANALYSIS OF QUANTITATIVE DATA**

3/2/4

(Previously PS 2047 ANALYSIS OF BEHAVIORAL DATA - L4)
(Updated Spring 2022)

**LEVEL 4
UK CREDITS: 20**

PREREQUISITES:

PS 1000 Introduction to Psychology as a Natural Science – L4
PS 1001 Introduction to Psychology as a Social Science – L4
PS 2260 Introduction to Statistical Thinking – L4

**CATALOG
DESCRIPTION:**

A comprehensive coverage of fundamental aspects in probability and statistics. Analysis of data with graphs, descriptive and inferential statistics. Interpretation of research findings from graphs, parametric and non-parametric tests. Statistical analysis using SPSS.

RATIONALE:

This module provides students with the basic knowledge of statistics and their application to research in the field of psychology. Students will gain an understanding of the underlying conceptual processes and assumptions of different statistical procedures, so as to choose appropriate statistical tests and use SPSS statistical software.

LEARNING OUTCOMES:

- Upon completion of this module, the student should be able to:
1. Demonstrate comprehensive knowledge regarding the concepts and terms used in data analysis that are useful for applications in the field of psychology.
 2. Demonstrate understanding of the selection, computation, and interpretation of important types of statistical analysis, including t-test analysis and non-parametric alternatives, ANOVA models, regression analysis.
 3. Utilize SPSS and interpret the SPSS outputs regarding important statistical models, including t-test analysis and non-parametric alternatives, ANOVA models, regression analysis.
 4. Report the results of important statistical models according to the APA format.
 5. Select the appropriate type of statistical analysis based on the structure of research designs commonly used in the field of psychology.

**METHOD OF TEACHING AND
LEARNING:**

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

- The module is delivered through lectures and practical workshops where SPSS is a teaching aid as well as a medium for solving problems.
- Lab component, an integral part of the module, is designed to give students hands-on experience with statistical package and data analysis (SPSS). Lab assignments are given each period to be completed during the lab session. This allows students to assimilate and consolidate material covered in lectures.

	<ul style="list-style-type: none"> ➤ Office hours ➤ Use of Blackboard site 								
ASSESSMENT:	<p>Summative:</p> <table border="1" data-bbox="688 317 1430 575"> <tr> <td data-bbox="688 317 1252 415">1st assessment: Examination Combination of multiple choice and completion items, short answer questions</td> <td data-bbox="1252 317 1430 415" style="text-align: center;">40%</td> </tr> <tr> <td data-bbox="688 415 1252 478">Second assessment: Application Assignments</td> <td data-bbox="1252 415 1430 478" style="text-align: center;">10%</td> </tr> <tr> <td data-bbox="688 478 1252 575">Final assessment: Examination Combination of multiple choice and completion items, short answers.</td> <td data-bbox="1252 478 1430 575" style="text-align: center;">50%</td> </tr> </table> <p>Formative:</p> <table border="1" data-bbox="688 638 1430 737"> <tr> <td data-bbox="688 638 1252 737">Weekly Lab Assignments: Analyzing sets of data and interpreting findings.</td> <td data-bbox="1252 638 1430 737" style="text-align: center;">0%</td> </tr> </table> <p>The 1st assessment tests Learning Outcomes 1, 2, 3, 4. The 2nd assessment tests Learning Outcomes 1,2,3,4,5. The final assessment tests Learning Outcomes 2, 3, 4, 5.</p> <p>Students are required to resit failed assessments in this module.</p>	1st assessment: Examination Combination of multiple choice and completion items, short answer questions	40%	Second assessment: Application Assignments	10%	Final assessment: Examination Combination of multiple choice and completion items, short answers.	50%	Weekly Lab Assignments: Analyzing sets of data and interpreting findings.	0%
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Final assessment: Examination Combination of multiple choice and completion items, short answers.	50%								
Weekly Lab Assignments: Analyzing sets of data and interpreting findings.	0%								
INDICATIVE READING:	<p>REQUIRED READING:</p> <p>Field A. (2017). <i>Discovering statistics with SPSS</i>. (5th Ed.). London: Sage Publications.</p> <p>RECOMMENDED READING:</p> <p>Bakeman & McArthur (1996). Picturing repeated measures. <i>Behavior Research Methods & Instrumentation</i>, 28(4), 584-589.</p> <p>Cohen, J. (1992). Quantitative methods in psychology: a power primer. <i>Psychological Bulletin</i>, 112, 155-159.</p> <p>Cohen, J. (1994). The Earth is round (p<.05). <i>American Psychologist</i>, 49, 997-1003.</p> <p>Coolican, H. (2009). <i>Research Methods and Statistics in Psychology</i>. Routledge.</p> <p>Crawford, J. R., Garthwaite, P. H., & Gray, C. D. (2003). Wanted: Fully operational definitions of dissociations in single-case studies. <i>Cortex</i>, 39, 357–370</p> <p>Dancey, C.P. & Reidy J. (2004). <i>Statistics Without Maths for Psychology</i>. Prentice Hall.</p> <p>Hayes, N. (2000). <i>Doing Psychological Research – gathering and analyzing data</i>. Philadelphia, USA: Open University Press.</p>								

	<p>Howitt, D. and Cramer, D. (2000). <i>First steps in research and statistics: a practical workbook for psychology students</i>. London, UK: Routledge.</p> <p>Leech, N. L., Barrett, K. C. & Morgan, G. A. (2015). <i>SPSS for intermediate statistics</i> (5th ed). New York, USA: Taylor & Francis Group.</p> <p>Privitera, G. J. (2011). <i>Statistics for the Behavioral Sciences</i>. Sage Publications</p> <p>Rowntree, D. (2003). <i>Statistics without tears: A primer for the non-mathematician</i>. Pearson.</p>
<p>INDICATIVE MATERIAL: (e.g. audiovisual, digital material, etc.)</p>	<p>REQUIRED MATERIAL: N/A</p> <p>RECOMMENDED MATERIAL: The Psychologist British Journal of Psychology American Psychologist Psychological Science Psychological Bulletin</p>
<p>COMMUNICATION REQUIREMENTS:</p>	<p>Academic use of English, both oral and written.</p>
<p>SOFTWARE REQUIREMENTS:</p>	<p>Microsoft Office, SPSS, Blackboard</p>
<p>WWW RESOURCES:</p>	<p>American Psychological Association www.apa.org</p> <p>British Psychological Society www.bps.org.uk</p> <p>Wadsworth Higher Education Learning www.wadsworth.com</p>
<p>INDICATIVE CONTENT:</p>	<ol style="list-style-type: none"> 1. Assessment of Normality 2. Type I and Type II Errors, Power of Study, Effect size 3. Standard Error and Confidence Intervals 4. Tests of Hypothesis for mean differences <ol style="list-style-type: none"> a. Non-parametric b. Parametric 5. Analysis of Variance: One-way Classification (between, within) 6. Non-parametric alternatives of ANOVA models (e.g. Kruskal-Wallis test, Friedman's test) 7. Analysis of Variance: Factorial Classification (between, within, mixed designs)

	8. Simple linear regression and standard multiple linear regression
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