

## H7APSTAT: Applied Statistics

Module Code:	H7APSTAT
Long Title	Applied Statistics <b>APPROVED</b>
Title	Applied Statistics
Module Level:	LEVEL 7
EQF Level:	6
EHEA Level:	First Cycle
Credits:	10
Module Coordinator:	Caoimhe Hannigan
Module Author:	Caoimhe Hannigan
Departments:	School of Business
Specifications of the qualifications and experience required of staff	Lecturer with PhD in Psychology or related cognate discipline
<b>Learning Outcomes</b>	
<i>On successful completion of this module the learner will be able to:</i>	
<b>#</b>	<b>Learning Outcome Description</b>
LO1	Demonstrate a familiarity with various statistical tests and make decisions as to when such tests should be used.
LO2	Demonstrate a comprehensive understanding of using SPSS for data analysis.
LO3	Report the results of statistical analyses in accordance with APA rules.
LO4	Demonstrate a practical understanding of statistical analyses and be able to correctly interpret the meaning of statistical output and the results section of scientific papers.
<b>Dependencies</b>	
<b>Module Recommendations</b>	
No recommendations listed	
<b>Co-requisite Modules</b>	
No Co-requisite modules listed	
<b>Entry requirements</b>	There are no additional entry requirements for this module. The programme entry requirements apply.

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Module Content & Assessment			
Indicative Content			
<b>Introduction to Inferential Statistics</b> • Role of inferential statistics. • Recap of descriptive statistics. • Central tendency, variability, normality, confidence intervals. • Hypothesis testing, Type I and Type II errors. • Entering data in SPSS, recoding and computing, calculating reliability and producing descriptive statistics.			
<b>Correlation Analysis</b> • Bivariate correlation analysis and its limitations. • An introduction to partial correlation analysis and controlling for covariates. • Conducting a Pearson correlation and a partial correlation in SPSS. • Reporting these results in APA format.			
<b>Multiple Regression Analysis I</b> • From correlation to regression (multivariate modelling). • Standard multiple regression analysis. • Applications of regression in psychological research. • Conducting a standard multiple regression analysis in SPSS. • Reporting these results in APA format.			
<b>Multiple Regression Analysis II</b> • Hierarchical modelling and the difference between hierarchical and standard multiple regression analysis. • Theoretical basis for hierarchical multiple regression. • Conducting a hierarchical multiple regression analysis in SPSS. • Reporting these results in APA format.			
<b>Logistic Regression Analysis</b> • Categorical outcomes compared continuous outcomes. • Binary compared to multinomial logistic regression. • The advantages of logistic regression and assumptions. • Pseudo R-values and odds ratios. • Model building for logistic regression. • Conducting a binary logistic regression analysis in SPSS. • Reporting these results in APA format.			
<b>t-Test</b> • A recap of t-tests (independent, dependent/paired samples, and one-sample t-tests). • Assumptions of t-tests. • Conducting an independent and paired samples t-tests in SPSS. • Reporting these results in APA format.			
<b>Analysis of Variance Testing 1</b> • From t-tests to ANOVAs. • The difference between between-groups and within-groups ANOVA. • Assumptions associated with each test. • Conducting a one-way between-groups ANOVA and a one-way within-groups ANOVA in SPSS. • Reporting these results in APA format.			
<b>Analysis of Variance Testing 2</b> • Multiple independent variables in ANOVA and interaction effects. • Multifactorial between-groups ANOVA. • The many applications of ANOVA testing. • Conducting a two-way between-groups ANOVA in SPSS. • Reporting these results in APA format.			
<b>Introduction to Latent Variable Modelling</b> • What is factor analysis/latent variable modelling? • Latent Variables and Observed Variables • Covariation and measurement error. • Factor loadings. • Steps to conducting factor analysis (e.g., extraction, rotation, and naming). • Conducting exploratory factor analysis in SPSS.			
Assessment Breakdown			%
Coursework			50.00%
End of Module Assessment			50.00%
Assessments			
Full Time			
Coursework			
<b>Assessment Type:</b>	Continuous Assessment	<b>% of total:</b>	50
<b>Assessment Date:</b>	n/a	<b>Outcome addressed:</b>	1,4
<b>Non-Marked:</b>	No		
<b>Assessment Description:</b> Students are presented, in class, with an unseen research paper that uses a statistical test that they have learnt about previously (e.g., standard multiple regression analysis). The students are required to read the research paper and answer short questions regarding the analysis and findings presented in the paper. These questions evaluate knowledge of the relevant statistical test. Students will have 90 minutes to complete this assessment.			
End of Module Assessment			
<b>Assessment Type:</b>	Terminal Exam	<b>% of total:</b>	50
<b>Assessment Date:</b>	End-of-Semester	<b>Outcome addressed:</b>	1,2,3,4
<b>Non-Marked:</b>	No		
<b>Assessment Description:</b> Students are presented with a dataset and a brief description of a study. The student is required to determine and carry out the appropriate statistical analyses using SPSS, based on the objectives of the study. The student uses the dataset to carry out these analyses and must write up the results in accordance with the APA guidelines. Students will have 2 hours to complete this assessment.			
No Workplace Assessment			
Reassessment Requirement			
<b>Repeat examination</b> <i>Reassessment of this module will consist of a repeat examination. It is possible that there will also be a requirement to be reassessed in a coursework element.</i>			
<b>Reassessment Description</b> Students must attempt all assessment components. If the student fails the module overall, they must repeat all failed, missed, or deferred assessments.			

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Module Workload				
Module Target Workload Hours 0 Hours				
Workload: Full Time				
Workload Type	Workload Description	Hours	Frequency	Average Weekly Learner Workload
Lecture	Classroom and demonstrations	24	Per Semester	2.00
Practical	Other: Practical Classes	24	Per Semester	2.00
Independent Learning	Independent learning	202	Per Semester	16.83
Total Weekly Contact Hours				4.00

Module Resources	
<i>Recommended Book Resources</i>	
<p>Julie Pallant. SPSS Survival Manual, 7th Ed. McGraw Hill.</p> <p>Andy Field. (2017), Discovering statistics using IBM SPSS statistics, 5th Ed. Sage.</p>	
<i>Supplementary Book Resources</i>	
<p>Howitt, D. &amp; Cramer, D.. (2017), Introduction to statistics in psychology with SPSS., 7th. Pearson.</p>	
<i>Recommended Article/Paper Resources</i>	
<p>Lakens, D. (2022), Improving Your Statistical Inferences.,  <a href="https://lakens.github.io/statistical_inferences/">https://lakens.github.io/statistical_inferences/</a></p> <p>Van de Schoot, R., &amp; Miočević, M.. (2020), Small sample size solutions: A guide for applied researchers and practitioners., Taylor &amp; Francis..</p>	
<i>Other Resources</i>	
<p>[YouTube Page], How 2 Stats page,  <a href="https://www.youtube.com/user/how2stats">https://www.youtube.com/user/how2stats</a></p> <p>[YouTube Page], Andy Field Page,  <a href="https://www.youtube.com/user/ProfAndyField">https://www.youtube.com/user/ProfAndyField</a></p>	
Discussion Note:	