Probability and Statistical Inference 2020/2021

Digital Portfolio Requirements

REQUIREMENT	PREPARE	EXPLORE
Knowledge and understanding	• Populations and samples • Key issues related to using a sample for the purposes of statistical analysis	• Statistical measures • Common issues which could impact a statistical analysis
Ability to apply knowledge and understanding	• Choose an appropriate sample for the purposes of a statistical analysis • Frame a research question so that it is suitable to use a statistical analysis to investigate • State hypotheses related to research questions	• Select/create appropriate measures and justify your choices • Inspect data for common issues which could impact a statistical analysis • Select appropriate tests to test hypotheses • Interpret test findings and draw conclusions
Ability to Communicate	• Appropriate details about a population and sample • A research question and hypotheses	• Your understanding of a dataset using appropriate statistics and visualisations • The implications of your inspection for a proposed statistical analysis

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Digital Portfolio Requirements

REQUIREMENT	ANALYSE	MODEL
Knowledge and understanding	• A range of statistical tests and their use • The implications of test outcomes for a statistical analysis	• Assumptions of the technique, when/how to use the technique • Common issues and challenges that may occur when using the technique and how to address these • The statistics, visualisations and other information needed to be able to interpret the outcomes of using the technique
Ability to apply knowledge and understanding	• Select appropriate statistical tests to test hypotheses with cognisance of the outcomes of a data inspection • Conduct appropriate statistical tests to test hypotheses • Interpret test findings and draw conclusions for a statistical analysis	• Apply the technique as part of a statistical analysis taking cognisance of the outcomes of data exploration and analysis • Address the common issues and challenges that may occur when using the technique • Interpret the findings to draw conclusions for proposed hypotheses
Ability to Communicate	• Reasons for test selection, interpretation, and conclusions using appropriate statistics and language	• The outcomes of the application of the technique using appropriate statistics, language and visualisation • Your interpretation of the outcomes of applying the technique for proposed hypotheses • The implications of the application of the technique for your research question

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Digital Portfolio Requirements

REQUIREMENT	REPORT	USING R

Apply knowledge and understanding	• Analyse and present the findings gained from your statistical analysis in a clear and accurate way
	• To a standard expected of postgraduate level academic work
	  ○ You are required to adopt the APA guidelines for reporting statistics and for citation https://apastyle.apa.org/ and adhere to APA conventions (this style guide should provide you with the information you need http://spss.allenandunwin.com.s3-website-ap-southeast-2.amazonaws.com/Files/APAStyle.pdf)
	• Using appropriate statistics, visualisations and language.
		• Create R Code to
		  ○ Inspect your dataset, create any additional measures, generate descriptive statistics and visualisations needed
		  ○ Execute appropriate statistical tests and generate statistics needed to test hypotheses
		  ○ Build models using logistic and linear regression and dimension reduction, generating appropriate statistics and visualisations to interpret outcomes and test assumptions
		  ○ **NOTE**: This R Code should be accessible in a manner so that it is easy to download and run without extensive setup.