



Unit Outline (Higher Education)

Institute / School:	Institute of Innovation, Science & Sustainability
Unit Title:	STATISTICAL METHODS
Unit ID:	STATS1000
Credit Points:	15.00
Prerequisite(s):	Nil
Co-requisite(s):	Nil
Exclusion(s):	Nil
ASCED:	010103

Description of the Unit:

This unit introduces students to the full range of descriptive statistical techniques, and also introduces the key concepts underlying statistical inference. A wide range of basic inferential techniques are introduced. Data from various disciplinary contexts is utilised, and there is a strong emphasis on computing skills, interpretation of computer output and communication of statistical results and conclusions.

Grade Scheme: Graded (HD, D, C, P, MF, F, XF)

Work Experience:

No work experience: Student is not undertaking work experience in industry.

Placement Component: No

Supplementary Assessment: Yes

Where supplementary assessment is available a student must have failed overall in the Unit but gained a final mark of 45 per cent or above, has completed all major assessment tasks (including all sub-components where a task has multiple parts) as specified in the Unit Description and is not eligible for any other form of supplementary assessment

Course Level:

Level of Unit in Course	AQF Level of Course					
	5	6	7	8	9	10
Introductory	<input type="checkbox"/>	<input type="checkbox"/>	✓	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Intermediate	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Advanced	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Learning Outcomes:
Knowledge:

- K1.** Describe a set of data using appropriate statistical measures, language and symbols.
- K2.** Describe quantitative data using probability distributions.
- K3.** Recognise the role of hypothesis tests in statistics.
- K4.** Describe relationship between two variables using linear regression equations.

Skills:

- S1.** Use standard statistical computer packages to perform routine data management tasks and statistical analyses.
- S2.** Present data in a clear and informative way in both tabular and graphical form.
- S3.** Perform appropriate hypothesis tests using standard statistical computer packages.
- S4.** Obtain a linear regression equation and interpret the coefficients and associated statistics.
- S5.** Perform one and two way analyses of variance.
- S6.** Communicate results from statistical analyses using appropriate statistical conventions.

Application of knowledge and skills:

- A1.** Interpret computer output in terms that relate to the particular problem situation.
- A2.** Select and perform appropriate statistical tests for given data sets and problem situations.

Unit Content:

Topics may include:

- Data presentation and basic descriptive statistics.
- Discrete and continuous probability distributions.
- Estimation and hypothesis testing (t-tests for single sample, paired and independent).
- Non-parametric alternatives.
- Chi-square tests.
- Correlation and regression.
- Introduction to 1-way and 2-way analysis of variance.

Learning Task and Assessment:

Learning Outcomes Assessed	Assessment Tasks	Assessment Type	Weighting
K1-K4, S1-S6, A1-A2	Practical use of appropriate statistical packages and interpretation of output.	Weekly laboratory classes and tutorial exercises	10 - 20 %
K1-K4, S1-S6, A1-A2	Appropriate statistical analysis and presentation of data based on a given context.	Assignment	20 - 40 %
K1-K4, S1-S6, A1-A2	Attend lectures, read and summarise all aspects of the unit.	Tests and Examination(s)	50 - 70 %

Adopted Reference Style:

APA

Refer to the [library website](#) for more information

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