ESSC11002 *Measurement and Evaluation in Health Science*
Term 3 - 2020

All details in this unit profile for ESSC11002 have been officially approved by CQUniversity and represent a learning partnership between the University and you (our student). The information will not be changed unless absolutely necessary and any change will be clearly indicated by an approved correction included in the profile.

General Information

Overview
In Measurement and Evaluation in Health Science you will study and explore a range of experimental designs and statistical analyses appropriate to investigations in a wide range of fields. This unit will introduce you to both parametric and non-parametric statistical methods that will allow you to be informed, evaluate the credibility and usefulness of information, and make appropriate decisions about research data. This is a practical unit that will develop your skills in the use of statistical software to organise, analyse and report statistical outcomes.

Details
Career Level: *Undergraduate*
Unit Level: *Level 1*
Credit Points: *6*
Student Contribution Band: *10*
Fraction of Full-Time Student Load: *0.125*

Pre-requisites or Co-requisites
There are no requisites for this unit.
Important note: Students enrolled in a subsequent unit who failed their pre-requisite unit, should drop the subsequent unit before the census date or within 10 working days of Fail grade notification. Students who do not drop the unit in this timeframe cannot later drop the unit without academic and financial liability. See details in the [Assessment Policy and Procedure (Higher Education Coursework)](#).

Offerings For Term 3 - 2020

- Online

Attendance Requirements
All on-campus students are expected to attend scheduled classes – in some units, these classes are identified as a mandatory (pass/fail) component and attendance is compulsory. International students, on a student visa, must maintain a full time study load and meet both attendance and academic progress requirements in each study period (satisfactory attendance for International students is defined as maintaining at least an 80% attendance record).

Website
[This unit has a website, within the Moodle system, which is available two weeks before the start of term. It is important that you visit your Moodle site throughout the term. Please visit Moodle for more information.](#)

Class and Assessment Overview

Recommended Student Time Commitment

Each 6-credit Undergraduate unit at CQUniversity requires an overall time commitment of an average of 12.5 hours of study per week, making a total of 150 hours for the unit.

Class Timetable

Regional Campuses

Bundaberg, Cairns, Emerald, Gladstone, Mackay, Rockhampton, Townsville

Metropolitan Campuses

Adelaide, Brisbane, Melbourne, Perth, Sydney

Assessment Overview

1. **Written Assessment**
Weighting: 45%
2. **Written Assessment**
Weighting: 55%

Assessment Grading

This is a graded unit: your overall grade will be calculated from the marks or grades for each assessment task, based on the relative weightings shown in the table above. You must obtain an overall mark for the unit of at least 50%, or an overall grade of 'pass' in order to pass the unit. If any 'pass/fail' tasks are shown in the table above they must also be completed successfully ('pass' grade). You must also meet any minimum mark requirements specified for a particular assessment task, as detailed in the 'assessment task' section (note that in some instances, the minimum mark for a task may be greater than 50%). Consult the University's Grades and Results Policy for more details of interim results and final grades.

CQUniversity Policies

All University policies are available on the CQUniversity Policy site.
You may wish to view these policies:

- Grades and Results Policy
- Assessment Policy and Procedure (Higher Education Coursework)
- Review of Grade Procedure
- Student Academic Integrity Policy and Procedure
- Monitoring Academic Progress (MAP) Policy and Procedure – Domestic Students
- Monitoring Academic Progress (MAP) Policy and Procedure – International Students
- Student Refund and Credit Balance Policy and Procedure
- Student Feedback – Compliments and Complaints Policy and Procedure
- Information and Communications Technology Acceptable Use Policy and Procedure

This list is not an exhaustive list of all University policies. The full list of University policies are available on the CQUniversity Policy site.

Previous Student Feedback

Feedback, Recommendations and Responses

Every unit is reviewed for enhancement each year. At the most recent review, the following staff and student feedback items were identified and recommendations were made.

Feedback from Have Your Say

Feedback
Zoom QA sessions were found to be helpful.

Recommendation
Continuation of Zoom QA sessions for students to be able to interact and ask questions.

Feedback from Have Your Say

Feedback
Students commented that there was a large amount of theory to learn each week and it was often difficult to keep up with weekly readings and lectures.

Recommendation
It is recommended that weekly content and readings are reviewed to ensure they are of a manageable workload.

Feedback from Unit coordinator reflection and in-class feedback from students

Feedback
Some students struggle with Maths, Excel and/or APA formatting.

Recommendation
It is recommended that the Unit coordinator will continue to engage with ALC to provide assistance with math, excel, and APA formatting.

Unit Learning Outcomes

On successful completion of this unit, you will be able to:

1. Identify fundamental statistical terminology and theory
2. Demonstrate knowledge and ability in collating, organising and displaying research data
3. Utilise descriptive and inferential statistics to inform appropriate decision making
4. Apply statistical software to analyse, manage and describe statistical outcomes.

Alignment of Learning Outcomes, Assessment and Graduate Attributes

— N/A Level	Introductory Level	Intermediate Level	Graduate Level	Professional Level	Advanced Level

Alignment of Assessment Tasks to Learning Outcomes

Assessment Tasks	Learning Outcomes			
	1	**2**	**3**	**4**
1 - Written Assessment - 45%	●	●	●	●
2 - Written Assessment - 55%	●	●	●	●

Alignment of Graduate Attributes to Learning Outcomes

Graduate Attributes	Learning Outcomes			
	1	**2**	**3**	**4**
1 - Communication	●	●	●	●
2 - Problem Solving	●	●	●	●
3 - Critical Thinking	●	●	●	●
4 - Information Literacy	●	●	●	●
5 - Team Work				
6 - Information Technology Competence	●	●	●	●
7 - Cross Cultural Competence		●		
8 - Ethical practice	●	●		
9 - Social Innovation				
10 - Aboriginal and Torres Strait Islander Cultures				

Alignment of Assessment Tasks to Graduate Attributes

Assessment Tasks	Graduate Attributes									
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**
1 - Written Assessment - 45%	●	●	●	●		●	●	●		
2 - Written Assessment - 55%	●	●	●	●		●	●			

Textbooks and Resources

Textbooks
ESSC11002
Prescribed

Statistics for people who (think they) hate statistics using microsoft excel
Edition: 4th (2016)
Authors: Neil Salkind
Sage
London , United Kingdom
ISBN: 9781483374086
Binding: Paperback

View textbooks at the CQUniversity Bookshop

IT Resources
You will need access to the following IT resources:

- CQUniversity Student Email
- Internet
- Unit Website (Moodle)
- Adobe Acrobat Reader (or similar) software for viewing PDF documents
- Excel 2016 (onwards) with Data Analysis Toolpak
- ZOOM Videoconferencing software. A ZOOM account is available with your student credentials. We will use this software for review meetings.

Referencing Style

All submissions for this unit must use the referencing style: American Psychological Association 7th Edition (APA 7th edition)
For further information, see the Assessment Tasks.

Teaching Contacts

Mandy Plumb Unit Coordinator
a.plumb@cqu.edu.au

Schedule

Week 1 - 09 Nov 2020

Module/Topic	Chapter	Events and Submissions/Topic
Introduction to Statistics and the Wonderful World of Excel	**Chapter 1** Statistics or Sadistics? It's Up to You **Chapter 6** Just the Truth: An Introduction to Understanding Reliability and Validity **Appendix A** Excel-erate Your Learning	

Week 2 - 16 Nov 2020

Module/Topic	Chapter	Events and Submissions/Topic

Module/Topic	Chapter	Events and Submissions/Topic
Descriptive Statistics and How to Present Them	**Chapter 2** Computing and Understanding Averages: Means to an End **Chapter 3** Vive la Difference: Understanding Variability **Chapter 4** A Picture Really Is Worth a Thousand Words	

Week 3 - 23 Nov 2020

Module/Topic	Chapter	Events and Submissions/Topic
So You Want to Be a Scientist? Introduction to Research and Hypothesis Testing	**Chapter 7** Hypotheticals and You: Testing Your Questions **Online Material**	

Week 4 - 30 Nov 2020

Module/Topic	Chapter	Events and Submissions/Topic
Testing Your Research Question: Importance of Normal Distribution and Introduction to Inferential Statistics	**Chapter 8** Are Your Curves Normal? Probability and Why It Counts **Chapter 9** Significantly Significant: What It Means for You and Me	

Vacation Week - 07 Dec 2020

Module/Topic	Chapter	Events and Submissions/Topic

Week 5 - 14 Dec 2020

Module/Topic	Chapter	Events and Submissions/Topic
Analysing Categorical Data	**Chapter 17** What to Do When You're Not Normal: Chi-Square and Some Other Nonparametric Tests **Online Material**	

Week 6 - 21 Dec 2020

Module/Topic	Chapter	Events and Submissions/Topic
Analysing Interval/Ratio Data Part 1: Testing for Differences with a Single Sample	**Chapter 10** Only the Lonely: The One-Sample Z-Test **Online Material**	

Vacation Week - 28 Dec 2020

Module/Topic	Chapter	Events and Submissions/Topic

Week 7 - 04 Jan 2021

Module/Topic	Chapter	Events and Submissions/Topic
Analysing Interval/Ratio Data Part 2: Testing for Differences between Two Independent Samples – Parametric and Nonparametric Tests	**Chapter 11** T(ea) for Two: Tests Between the Means of Different Groups **Chapter 17** What to Do When You're Not Normal: Chi-Square and Some Other Nonparametric Tests **Online Material**	

Week 8 - 11 Jan 2021

Module/Topic	Chapter	Events and Submissions/Topic
Analysing Interval/Ratio Data Part 3: Testing for Differences between Two Dependent Samples – Parametric and Nonparametric Tests	**Chapter 12** T(ea) for Two: Tests Between the Means of Related Groups **Chapter 17** What to Do When You're Not Normal: Chi-Square and Some Other Nonparametric Tests **Online Material**	Statistical Analysis #1 Due: Week 8 Thursday 14 Jan 2021 at 5:00pm AEST **Statistical Analysis #1** Due: Week 8 Thursday (14 Jan 2021) 5:00 pm AEST

Week 9 - 18 Jan 2021

Module/Topic	Chapter	Events and Submissions/Topic

| Analysing Interval/Ratio Data Part 4: Testing for Differences between More Than Two Independent Samples – Parametric and Nonparametric Tests | **Chapter 13** Two Groups Too Many? Try Analysis of Variance
Chapter 17 What to Do When You're Not Normal: Chi-Square and Some Other Nonparametric Tests
Online Material | |

Week 10 - 25 Jan 2021

Module/Topic	**Chapter**	**Events and Submissions/Topic**
Analysing Interval/Ratio Data Part 5: Testing for Differences between More Than Two Dependent Samples – Parametric vs Nonparametric Tests	**Chapter 13** Two Groups Too Many? Try Analysis of Variance **Chapter 17** What to Do When You're Not Normal: Chi-Square and Some Other Nonparametric Tests **Online Material**	

Week 11 - 01 Feb 2021

Module/Topic	**Chapter**	**Events and Submissions/Topic**
Analysing Interval/Ratio Data Part 6: Testing for Associations and Predictions – Parametric and Nonparametric Tests	**Chapter 5** Ice Cream and Crime: Computing Correlation Coefficients **Chapter 15** Cousins or Just Good Friends? Testing Relationships Using Correlation Coefficient **Chapter 16** Predicting Who'll Win the Super Bowl: Using Linear Regression **Online Material**	

Week 12 - 08 Feb 2021

Module/Topic	**Chapter**	**Events and Submissions/Topic**
Unit Wrap-up		

Review/Exam Week - 15 Feb 2021

Module/Topic	**Chapter**	**Events and Submissions/Topic**
		Statistical Analysis #2 Due: Review/Exam Week Monday 15 Feb 2021 at 5:00pm AEST **Statistical Analysis #2** Due: Exam Week Monday (15 Feb 2021) 5:00 pm AEST

Assessment Tasks

1 Statistical Analysis #1

Assessment Type
Written Assessment

Task Description
You will be provided with an Excel file that will contain a set of data for which you will need to perform a series of analyses. The assessment questions will be based on material covered in Week 1 to Week 7 (inclusive) and will include the following:
1. Statistical Terminology and Knowledge
2. Use of Built-in Excel Functions
3. Construction of a Frequency Distribution Table and Histograms
4. Calculating and Summarising Descriptive Statistics
5. Statistical Analysis of Categorical Data and Summarising Findings of the Analysis
6. Conducting a Single Sample Statistical Test and Summarising Findings of the Analysis
7. Conducting a Statistical Test of Differences and Summarising Findings of the Analysis
To complete this assessment, you must answer the questions on the provided Excel file. Answers must be clearly organised and using APA formatting as required. This task is to be completed individually. You may use multiple resources to help answer the questions. A copy of the data sets and questions for this assessment will be made available

(as an Excel file) at the start of Week 3 on the unit Moodle site. Each question will provide a breakdown of marks available for the correct answers. A marking rubric is available on the assessment task.

Assessment Due Date
Week 8 Thursday (14 Jan 2021) 5:00 pm AEST
The completed Excel file will be submitted via the Moodle Online Assignment upload link.

Return Date to Students
Week 10 Thursday (28 Jan 2021)
Feedback and grade will be returned via the unit Moodle site.

Weighting
45%

Assessment Criteria
Marking will be based on the following criteria:
1. Appropriate use and presentation of Excel functions and statistical analyses
2. Appropriate summary of statistical findings including APA formatting

Referencing Style

- [American Psychological Association 7th Edition (APA 7th edition)](#)

Submission
Online

Submission Instructions
Assessments are to be completed on the provided Excel file and submitted as an Excel file (.xls or .xlsx) via the Moodle Online Assignment upload link.

Learning Outcomes Assessed

- Identify fundamental statistical terminology and theory
- Demonstrate knowledge and ability in collating, organising and displaying research data
- Utilise descriptive and inferential statistics to inform appropriate decision making
- Apply statistical software to analyse, manage and describe statistical outcomes.

Graduate Attributes

- Communication
- Problem Solving
- Critical Thinking
- Information Literacy
- Information Technology Competence
- Cross Cultural Competence
- Ethical practice

2 Statistical Analysis #2

Assessment Type
Written Assessment

Task Description
For this assessment item, you will be provided an Excel file with a set of data and six (6) research scenarios/questions. For each research scenario you will be required to conduct an appropriate statistical analysis to answer the proposed question. You may also need to conduct some preliminary analyses to determine the appropriate statistical analysis necessary to answer the question. In addition to the statistical analysis, you will also provide a written summary detailing the analysis that was completed and the results of the statistical analysis using APA formatting as required.

To complete this assessment, you must upload two (2) files (one (1) Excel file and one (1) Word file):
1. **Excel file** – For each data set and associated research question, you must conduct the appropriate analyses on the provided Excel file. Your data and analyses must be clearly formatted/organised and labelled.
2. **Word file** – For each data set and associated research question, you must write a brief summary reporting the statistical analysis and the findings (along with any requested tables or figures) in APA format. The summary for each data set and associated research question should be no more than 150 words. NOTE: Simply copying data from the Excel spreadsheet and embedding into the Word file will NOT suffice for this assessment piece.
This task is to be completed individually. You may use multiple resources to help answer the questions. A copy of the data sets and research questions for this assessment will be made available (as an Excel file) at the start of Week 6 on the unit Moodle site. Please note, the analyses required for this assessment will be based on material covered in Week 7 to Week 11 (inclusive). Each question will provide a breakdown of marks available for the correct answers. A marking

rubric is available on the assessment task.

Assessment Due Date
Exam Week Monday (15 Feb 2021) 5:00 pm AEST
Both the Excel and Word files will be submitted via the Moodle Online Assignment upload link.

Return Date to Students

Assessment results will be returned upon certification of grades.

Weighting
55%

Assessment Criteria
Marking will be based on the following criteria:
1. Appropriate use and presentation of Excel statistical analyses to answer each proposed research question
2. Appropriate summary and interpretation of statistical findings including APA formatting (including tables and figures)

Referencing Style

- [American Psychological Association 7th Edition (APA 7th edition)](#)

Submission
Online

Submission Instructions
You are to submit two files (one Excel file (.xls or .xlsx) and one Word file (.doc or .docx)) via the Moodle Online Assignment upload link.

Learning Outcomes Assessed

- Identify fundamental statistical terminology and theory
- Demonstrate knowledge and ability in collating, organising and displaying research data
- Utilise descriptive and inferential statistics to inform appropriate decision making
- Apply statistical software to analyse, manage and describe statistical outcomes.

Graduate Attributes

- Communication
- Problem Solving
- Critical Thinking
- Information Literacy
- Information Technology Competence
- Cross Cultural Competence

Academic Integrity Statement

As a CQUniversity student you are expected to act honestly in all aspects of your academic work.

Any assessable work undertaken or submitted for review or assessment must be your own work. Assessable work is any type of work you do to meet the assessment requirements in the unit, including draft work submitted for review and feedback and final work to be assessed.

When you use the ideas, words or data of others in your assessment, you must thoroughly and clearly acknowledge the source of this information by using the correct referencing style for your unit. Using others' work without proper acknowledgement may be considered a form of intellectual dishonesty.

Participating honestly, respectfully, responsibly, and fairly in your university study ensures the CQUniversity qualification you earn will be valued as a true indication of your individual academic achievement and will continue to receive the respect and recognition it deserves.

As a student, you are responsible for reading and following CQUniversity's policies, including the **Student Academic Integrity Policy and Procedure**. This policy sets out CQUniversity's expectations of you to act with integrity, examples of academic integrity breaches to avoid, the processes used to address alleged breaches of academic integrity, and potential penalties.

What is a breach of academic integrity?
A breach of academic integrity includes but is not limited to plagiarism, self-plagiarism, collusion, cheating, contract cheating, and academic misconduct. The Student Academic Integrity Policy and Procedure defines what these terms mean and gives examples.

Why is academic integrity important?
A breach of academic integrity may result in one or more penalties, including suspension or even expulsion from the University. It can also have negative implications for student visas and future enrolment at CQUniversity or elsewhere. Students who engage in contract cheating also risk being blackmailed by contract cheating services.

Where can I get assistance?
For academic advice and guidance, the Academic Learning Centre (ALC) can support you in becoming confident in completing assessments with integrity and of high standard.

What can you do to act with integrity?

Be Honest
If your assessment task is done by someone else, it would be dishonest of you to claim it as your own

Seek Help
If you are not sure about how to cite or reference in essays, reports etc, then seek help from your lecturer, the library or the Academic Learning Centre (ALC)

Produce Original Work
Originality comes from your ability to read widely, think critically, and apply your gained knowledge to address a question or problem