# ESSC11002 *Measurement and Evaluation in Health Science*
## Term 2 - 2017

Profile information current as at 04/05/2024 04:45 am

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
The unit is designed so that students should be able to evaluate a range of experimental designs and statistical analyses appropriate to investigations in exercise and sport science. Students will be provided with statistical knowledge and skills to organise, analyse and interpret scientific data. Students will be required to utilise and apply statistical software to determine both descriptive and inferential statistical outcomes. The use of statistical/spreadsheet computer package for data analysis is covered. Lecture material will be supplemented by tutorials throughout the unit. Practical examples across all of the scientific disciplines are used in lectures and tutorials.

### 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 2 - 2017

- Distance

### 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. **Online Quiz(zes)**
Weighting: 20%
2. **Written Assessment**
Weighting: 35%
3. **Written Assessment**
Weighting: 45%

## 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 Unit Evaluations

**Feedback**

Students found the step-by-step tutorial videos very useful and helped with understanding of Excel and learning each statistical analysis. However, some students continued to have issues using Real-Statistics Add-on.

**Recommendation**

We will continue to provide the pre-recorded tutorial videos and statistical analysis tasks. In addition, we will continue to offer drop in sessions to further assist those who may be having trouble completing the analyses. Real-Stats was the chosen statistical analysis program as it is free and widely available to PC and MAC users with various versions of Excel. We will continue to explore statistical analysis programs to find the best option for students.

### Feedback from Unit Evaluations

**Feedback**

Students appreciated the prompt feedback to questions via the forums and the availability of teaching staff to assist.

**Recommendation**

Continue to use forums as main communication. This allows prompt replies from multiple staff associated with the unit rather than individual emails. We will also continue to offer online 'drop in' sessions to provide additional assistance.

### Feedback from Unit Evaluations

**Feedback**

Students found the assessment tasks practical and useful for learning how to apply statistical analyses to various data. However, for Assessment 3 some students had difficulty finding suitable data which took considerable time.

**Recommendation**

Assessment tasks to continue in present format with minor updating. Assessment 3 allows students to select their own data on a topic of interest to them and complete various statistical analyses on that data. Some links to data sets are provided and we will continue to provide additional updated resources. Staff will also continue to review data sets (as request from student) to ensure suitability for the assessment.

### Feedback from Unit Evaluations

**Feedback**

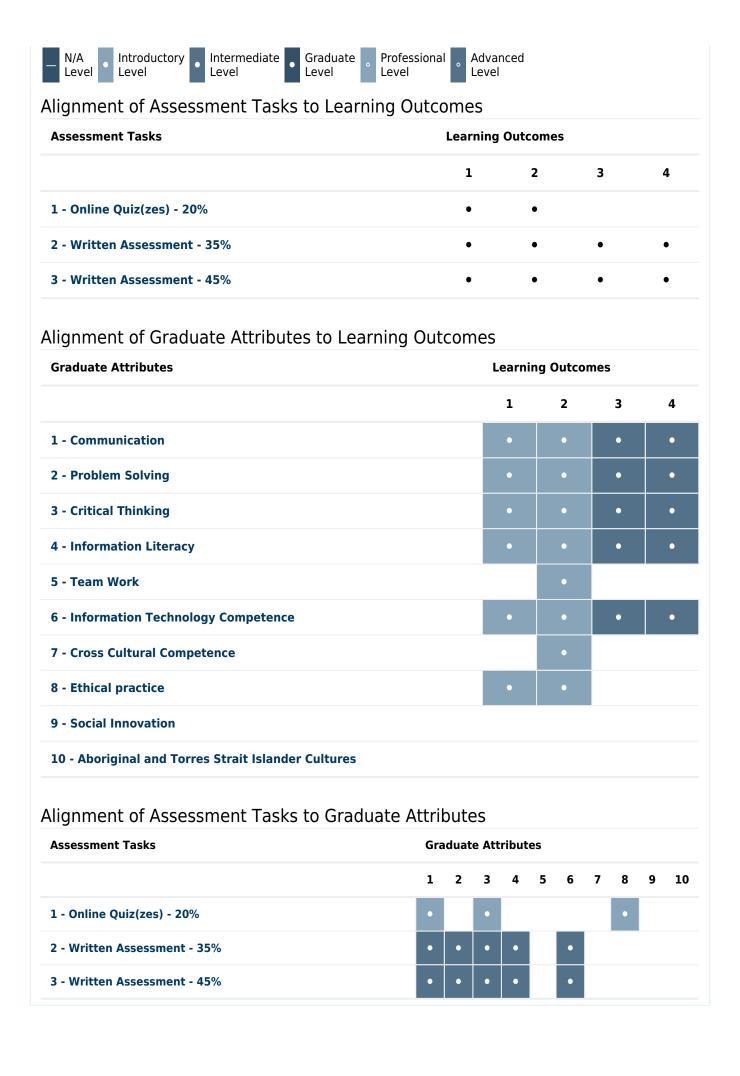Students find lectures long and boring.

**Recommendation**

This is a common problem with statistics units. We are continuing modify the lecture material to meet student needs and keep them engaged. It is recommended that this unit moves to online only format to allow for pre-recording of shorter 'lectures' and more integration of practical 'tutorial' tasks. These recordings can then be supplemented with the 'online' drop-in sessions so students can still have some live interactions with the staff.

# Unit Learning Outcomes

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

1. Evaluate a range of experimental designs and statistical analyses appropriate to investigations in exercise and sport science.
2. Demonstrate knowledge and ability in collating, organising and displaying affective data
3. Utilise descriptive and inferential statistics to make decisions
4. Apply statistical software to analyse, manage and describe statistical relationships.

# Alignment of Learning Outcomes, Assessment and Graduate Attributes

## Alignment of Assessment Tasks to Learning Outcomes

| Assessment Tasks | Learning Outcomes | | | |
|---|---|---|---|---|
| | 1 | 2 | 3 | 4 |
| 1 - Online Quiz(zes) - 20% | ● | ● | | |
| 2 - Written Assessment - 35% | ● | ● | ● | ● |
| 3 - Written Assessment - 45% | ● | ● | ● | ● |

## 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 - Online Quiz(zes) - 20% | ● | | ● | | | | | ● | | |
| 2 - Written Assessment - 35% | ● | ● | ● | ● | | ● | | | | |
| 3 - Written Assessment - 45% | ● | ● | ● | ● | | ● | | | | |

# Textbooks and Resources

## Textbooks
ESSC11002

**Prescribed**

**Statistics for People Who (Think They) Hate Statistics - Using Microsoft Excel 2016**
Edition: 4th (2017)
Authors: Neil J. Salkind
SAGE Publications, Inc
Thousand Oaks , CA , USA
ISBN: 9781483374086
Binding: Paperback

**Additional Textbook Information**
Electronic version of this textbook can be found online via a number of sources listed on Sage Publishing. Alternatively you may search online using the eText ISBN list below.
eText ISBN: 9781483374109 OR 1483374106

**View textbooks at the CQUniversity Bookshop**

## IT Resources

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

- CQUniversity Student Email
- Internet
- Unit Website (Moodle)
- Excel 2016 with Data Analysis Toolpak

# Referencing Style

All submissions for this unit must use the referencing style: American Psychological Association 6th Edition (APA 6th edition)
For further information, see the Assessment Tasks.

# Teaching Contacts

**Crystal Kean** Unit Coordinator
c.kean@cqu.edu.au

# Schedule

**Week 1 - 10 Jul 2017**

| 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<br>**Chapter 6** Just the Truth: An Introduction to Understanding Reliability and Validity<br>**Appendix A** Excel-erate Your Learning | |

**Week 2 - 17 Jul 2017**

| Module/Topic | Chapter | Events and Submissions/Topic |
|---|---|---|
| | | |

| | Chapter 2 Computing and Understanding Averages: Means to an End | |
|---|---|---|
| Descriptive Statistics and How to Present Them | Chapter 3 Vive la Difference: Understanding Variability | |
| | Chapter 4 A Picture Really Is Worth a Thousand Words | |

## Week 3 - 24 Jul 2017

| 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<br>**Online Material** | |

## Week 4 - 31 Jul 2017

| 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<br>Chapter 9 Significantly Significant: What It Means for You and Me | |

## Week 5 - 07 Aug 2017

| 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<br>**Online Material** | **Online Quiz** Due: Week 5 Friday (11 Aug 2017) 5:00 pm AEST |

## Vacation Week - 14 Aug 2017

| Module/Topic | Chapter | Events and Submissions/Topic |
|---|---|---|
| | | |

## Week 6 - 21 Aug 2017

| 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<br>**Online Material** | |

## Week 7 - 28 Aug 2017

| 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<br>**Online Material** | |

## Week 8 - 04 Sep 2017

| 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<br>**Online Material** | **Written Assessment #1** Due: Week 8 Monday (4 Sept 2017) 5:00 pm AEST |

## Week 9 - 11 Sep 2017

| 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<br>**Online Material** | |

## Week 10 - 18 Sep 2017

| 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 | **Online Material** | |

**Week 11 - 25 Sep 2017**

| 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<br>**Chapter 15** Cousins or Just Good Friends? Testing Relationships Using Correlation Coefficient<br>**Chapter 16** Predicting Who'll Win the Super Bowl: Using Linear Regression | |

**Week 12 - 02 Oct 2017**

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

**Review/Exam Week - 09 Oct 2017**

| Module/Topic | Chapter | Events and Submissions/Topic |
|---|---|---|

**Exam Week - 16 Oct 2017**

| Module/Topic | Chapter | Events and Submissions/Topic |
|---|---|---|
| | | **Written Assessment #2** Due: Exam Week Monday (16 Oct 2017) 5:00 pm AEST |

# Assessment Tasks

## 1 Online Quiz

**Assessment Type**
Online Quiz(zes)

**Task Description**
This assessment item is made up of 30 multiple-choice online quiz questions. Questions will be drawn randomly from a larger pool of questions. The quiz will assess a wide range of unit material (lectures, tutorials and textbook) covered in Week 1 through to (and inclusive of) Week 4. This task is to be <u>completed individually</u> using multiple resources to help answer the questions.

The quiz will be made available at the end of Week 4 (Friday 4 August 2017) and will be due end of Week 5 (Friday 11 August 2017).

**Number of Quizzes**
1

**Frequency of Quizzes**
Other

**Assessment Due Date**
Week 5 Friday (11 Aug 2017) 5:00 pm AEST
Completed using the Moodle Online Quiz System.

**Return Date to Students**
Vacation Week Friday (18 Aug 2017)
Results tabulated by the Moodle Online Quiz System.

**Weighting**
20%

**Assessment Criteria**
Answers will either be correct or incorrect and tabulated by the Moodle Online Quiz System.

**Referencing Style**

- American Psychological Association 6th Edition (APA 6th edition)

**Submission**
Online

**Submission Instructions**
Submitted online via the Moodle Quiz System.

**Learning Outcomes Assessed**

- Evaluate a range of experimental designs and statistical analyses appropriate to investigations in exercise and sport science.
- Demonstrate knowledge and ability in collating, organising and displaying affective data

**Graduate Attributes**

- Communication
- Critical Thinking
- Ethical practice

# 2 Written Assessment #1

**Assessment Type**
Written Assessment

**Task Description**
You will be provided an Excel file with five (5) sets of data for which need to perform a series of data analyses. The assessment questions will be based on material covered in Week 1 through to (and inclusive of) Week 6 and will include the following:

1. Use of Built-in Excel Functions
2. Construction of a Frequency Distribution Table and Histograms
3. Calculating and Summarising Descriptive Statistics
4. Statistical Analysis of Categorical Data and Summarizing Findings of the Analysis
5. Conducting a Single Sample Statistical Test and Summarizing Findings of the Test

This task is to be <u>completed individually</u>. You may use multiple resources to help answer the questions. To complete this assignment, you must answer the questions on the provided Excel file. Answers must be clearly organised and using APA formatting as required.
A copy of the data sets and questions for this assessment will be made available (in an Excel File) at start of Week 3 on the unit Moodle site.

**Assessment Due Date**
Week 8 Monday (4 Sept 2017) 5:00 pm AEST

**Return Date to Students**
Monday (18 Sept 2017)
Feedback and grade will be returned via the Moodle site

**Weighting**
35%

**Assessment Criteria**
Answers will be assessed based on:

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 6th Edition (APA 6th edition)

**Submission**
Online

**Submission Instructions**
Assessments are to be completed on the provided Excel spreadsheet and submitted via Moodle.

**Learning Outcomes Assessed**

- Evaluate a range of experimental designs and statistical analyses appropriate to investigations in exercise and

sport science.

- Demonstrate knowledge and ability in collating, organising and displaying affective data
- Utilise descriptive and inferential statistics to make decisions
- Apply statistical software to analyse, manage and describe statistical relationships.

**Graduate Attributes**

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

# 3 Written Assessment #2

**Assessment Type**
Written Assessment

**Task Description**
You will be provided an Excel file with six (6) sets of data for which need to perform a series of statistical analyses. For each data set, a research question will be presented and you will be required to conduct an appropriate statistical analysis to answer the proposed question. You may also need to do some preliminary analyses to determine the appropriate statistical test necessary to answer the question. The analyses required will be based on material covered in Week 7 through to (and inclusive of) Week 11.

This task is to be <u>completed individually</u>. You may use multiple resources to help answer the questions. To complete this assessment, you must upload two (2) files (one (1) Excel File and one (1) Word Document):

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.
2. **Word Document** – 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 documents will NOT suffice for this assessment piece.

A copy of the data sets and research questions for this assessment will be made available (in an Excel File) at start of Week 7 on the unit Moodle site.

**Assessment Due Date**
Exam Week Monday (16 Oct 2017) 5:00 pm AEST

**Return Date to Students**

Assessment results will be returned with release of grades.

**Weighting**
45%

**Assessment Criteria**
Marking will be based on the following criteria:

- Completing and presenting appropriate statistical analyses to answer each proposed research question
- Written summary of statistical analyses and interpretation of results including any required tables and figures
- Formatting and writing style

More details will be available on the Moodle site.

**Referencing Style**

- [American Psychological Association 6th Edition (APA 6th edition)](#)

**Submission**
Online

**Submission Instructions**
Completed answers will be submitted in a Word (.doc or .docx) file and an Excel (.xls or .xlsx) file via the Moodle online assignment upload link.

**Learning Outcomes Assessed**

- Evaluate a range of experimental designs and statistical analyses appropriate to investigations in exercise and

sport science.

- Demonstrate knowledge and ability in collating, organising and displaying affective data
- Utilise descriptive and inferential statistics to make decisions
- Apply statistical software to analyse, manage and describe statistical relationships.

**Graduate Attributes**

- Communication
- Problem Solving
- Critical Thinking
- Information Literacy
- Information Technology 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