STAT11048 *Essential Statistics*
Term 2 - 2017

Profile information current as at 28/04/2024 01:49 am

General Information

Overview
This unit introduces students to the concepts and applications of probability and statistical modelling involving questions of estimation, inference, regression and correlation. Topics covered include descriptive statistics, measures of central tendency and dispersion, probability and probability distributions (binomial, Poisson, normal), confidence intervals, one and two sample hypothesis tests, one way analysis of variance, chi-square tests, linear regression and correlation. The use of a calculator and a statistical/spreadsheet computer package for data analysis is covered.

Details
Career Level: *Undergraduate*
Unit Level: *Level 1*
Credit Points: *6*
Student Contribution Band: *7*
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

- Brisbane
- Bundaberg
- Cairns
- Distance
- Gladstone
- Mackay
- Melbourne
- Perth
- Rockhampton
- Sydney
- Townsville

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: 20%
2. **Written Assessment**
Weighting: 20%
3. **Examination**
Weighting: 60%

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 Student feedback

Feedback
More basic maths help needed for students with little or no background in maths.

Recommendation
Will discuss this issue with Maths staff in the ALC and arrange for them to deliver appropriate help.

Feedback from Self reflection and student feedback

Feedback
The Study Guide needs to be revised and updated.

Recommendation
A new edition of the Study Guide will be produced for Term 1 2017

Feedback from Self reflection and student feedback

Feedback
The lecture videos need updating as there are some technical issues in the current videos and the Study Guide used is a 2015 edition. Also need to include more demonstrations with the prescribed calculator.

Recommendation
A new set of lecture videos will be recorded using the 2017 edition of the Study Guide.

Unit Learning Outcomes

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

1. Introduce the basic concepts of data handling and statistical analysis including some considerations of sampling theory.
2. Introduce the concept of probability and to consider the applications of several probability distributions to the solution of problems.
3. Draw statistical conclusions about a population based on a sample of data using one sample, two sample and ANOVA tests.
4. Use a calculator and computer software to perform statistical calculations.

This unit is designed to provide a foundation in statistical thinking as applied to decision making in life.

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 - 20%	•	•		•
2 - Written Assessment - 20%	•	•	•	•

Assessment Tasks	Learning Outcomes			
	1	2	3	4
3 - Examination - 60%	•	•	•	•

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 - 20%	•	•	•	•		•		•		
2 - Written Assessment - 20%	•	•	•	•		•		•		
3 - Examination - 60%		•	•	•		•		•		

Textbooks and Resources

Textbooks

STAT11048

Prescribed

STAT11048 Study Guide
Edition: 3rd (2017)
Authors: Ross Shepherd
CQUniversity Publishing
Rockhampton , Qld , AUSTRALIA
Binding: Paperback
STAT11048

Supplementary

Introduction to Business Statistics
Edition: 7th (2011)
Authors: R Weiers
South Western
Belmont , CA , USA
ISBN: 0-538-45217-X
Binding: Hardcover

Additional Textbook Information
The STAT11048 Study Guide is the only prescribed textbook. It is highly recommended that you buy a copy of the 2017 edition from the university bookshop. The weekly lectures will closely follow the "Notes from Lectures" section in each chapter of the Study Guide. **The Weiers textbook is NOT compulsory for the unit**. It is only used as supplementary reading in the unit. The Weiers textbook is referred to in each chapter of the Study Guide but only for supplementary reading.
Students will also need a simple scientific calculator with built-in functions to calculate the mean and standard deviation of a list of numbers. That is, it must have a '**Statistics MODE**' built-in. The SHARP calculator EL-531XHB which is available from the CQUni bookshop is similar to the SHARP calculator I will use in the lectures and tutorials.

View textbooks at the CQUniversity Bookshop

IT Resources

You will need access to the following IT resources:

- CQUniversity Student Email
- Internet
- Unit Website (Moodle)
- Microsoft Excel or Equivalent Spreadsheet Application

Referencing Style

All submissions for this unit must use the referencing style: Harvard (author-date)
For further information, see the Assessment Tasks.

Teaching Contacts

Lynne Campbell Unit Coordinator
l.campbell@cqu.edu.au

Schedule

Week 1 - 10 Jul 2017

Module/Topic	Chapter	Events and Submissions/Topic

Introduction to Statistics	Study Guide chapter 1. Textbook chapter 1 & chapter 2 (section 2.4 only)	Watch lecture video and do tutorial exercises for Week 1.
Week 2 - 17 Jul 2017		
Module/Topic	**Chapter**	**Events and Submissions/Topic**
Data Distributions	Study Guide chapter 2. Textbook chapter 2 (sections 2.1 to 2.3)	Watch lecture video and do tutorial exercises for Week 2.
Week 3 - 24 Jul 2017		
Module/Topic	**Chapter**	**Events and Submissions/Topic**
Central Tendency and Dispersion	Study Guide chapter 3. Textbook chapter 3 (all sections except 3.6)	Watch lecture video and do tutorial exercises for Week 3.
Week 4 - 31 Jul 2017		
Module/Topic	**Chapter**	**Events and Submissions/Topic**
Counting Principles and Probability	Study Guide chapter 4. Textbook chapter 5 (all sections except 5.6)	Watch lecture video and do tutorial exercises for Week 4.
Week 5 - 07 Aug 2017		
Module/Topic	**Chapter**	**Events and Submissions/Topic**
Discrete Probability Distributions	Study Guide chapter 5. Textbook chapter 6 (all sections except 6.3)	Watch lecture video and do tutorial exercises for Week 5. **Assignment 1 Quiz** Due: Week 5 Friday (11 Aug 2017) 11:00 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**
Continuous Probability Distributions	Study Guide chapter 6. Textbook chapter 7 (all sections except 7.5 and 7.6)	Watch lecture video and do tutorial exercises for Week 6.
Week 7 - 28 Aug 2017		
Module/Topic	**Chapter**	**Events and Submissions/Topic**
Sampling and Sampling Distributions	Study Guide chapter 7. Textbook chapter 4 (only sections 4.6 and 4.7) and chapter 8 (all sections except 8.6)	Watch lecture video and do tutorial exercises for Week 7.
Week 8 - 04 Sep 2017		
Module/Topic	**Chapter**	**Events and Submissions/Topic**
Estimation	Study Guide chapter 8. Textbook chapter 9 (all sections except 9.8)	Watch lecture video and do tutorial exercises for Week 8.
Week 9 - 11 Sep 2017		
Module/Topic	**Chapter**	**Events and Submissions/Topic**
Hypothesis Tests for a Population Mean or Proportion	Study Guide chapter 9. Textbook chapter 10 (all sections except 10.7)	Watch lecture video and do tutorial exercises for Week 9. **Assignment 2 Quiz** Due: Week 9 Friday (15 Sept 2017) 11:00 pm AEST
Week 10 - 18 Sep 2017		
Module/Topic	**Chapter**	**Events and Submissions/Topic**

Hypothesis Tests for Two or More Population Means	Study Guide chapter 10. Textbook chapter 11 (sections 11.1, 11.2, 11.4 and 11.5) and chapter 12 (sections 12.1 to 12.3)	Watch lecture video and do tutorial exercises for Week 10.
Week 11 - 25 Sep 2017		
Module/Topic	**Chapter**	**Events and Submissions/Topic**
Linear Regression and Correlation	Study Guide chapter 12. Textbook chapter 2 (section 2.5 only) & chapter 15 (all sections except 15.3 and 15.5)	Watch lecture video and do tutorial exercises for Week 11.
Week 12 - 02 Oct 2017		
Module/Topic	**Chapter**	**Events and Submissions/Topic**
Chi-Square Tests	Study Guide chapter 11. Textbook chapter 13 (all sections except 13.6)	Watch lecture video and do tutorial exercises for Week 12.
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**

Term Specific Information

To pass the course (STAT11048) you must obtain:

- at least 24 marks out of 60 marks on the final exam **AND**
- at least 50% of the combined total mark for the two assignments and the exam.

Contact information for the Course Coordinator, Lynne Campbell:
Email: *l.campbell@cqu.edu.au*
Telephone: 07 4970 7294
Office: Room G06-7, Martin Hanson (Admin) Building, Gladstone Marina Campus, Bryan Jordan Drive, GLADSTONE
If you have any questions, please do not hesitate to email me and I will get back to you within two working days.

Assessment Tasks

1 Assignment 1 Quiz

Assessment Type
Written Assessment

Task Description
Assignment 1 is a Moodle Quiz which consists of 20 multiple choice questions which examine topics from Weeks 1 to 4 of the unit. Full details about the Assignment 1 Quiz are available on the STAT11048 Moodle website.

Assessment Due Date
Week 5 Friday (11 Aug 2017) 11:00 pm AEST
Submit in Week 5 by 11pm on Friday.

Return Date to Students
Week 6 Friday (25 Aug 2017)
Results will be available to students two weeks after the submission date.

Weighting
20%

Assessment Criteria
Each quiz question is worth one (1) mark, which gives a total of twenty (20) marks or 20% for Assignment 1. Further details about Assignment 1 are available on the STAT11048 Moodle website.

Referencing Style

- Harvard (author-date)

Submission
Online

Submission Instructions
See the STAT11048 Moodle website for details about assignment submission.

Learning Outcomes Assessed

- Introduce the basic concepts of data handling and statistical analysis including some considerations of sampling theory.
- Introduce the concept of probability and to consider the applications of several probability distributions to the solution of problems.
- Use a calculator and computer software to perform statistical calculations.

Graduate Attributes

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

2 Assignment 2 Quiz

Assessment Type
Written Assessment

Task Description
Assignment 2 is a Moodle Quiz which consists of 20 multiple choice questions which examine topics from Weeks 5 to 8 of the unit. Full details about the Assignment 2 Quiz are available on the STAT11048 Moodle website.

Assessment Due Date
Week 9 Friday (15 Sept 2017) 11:00 pm AEST
Submit in Week 9 by 11pm on Friday

Return Date to Students
Week 11 Friday (29 Sept 2017)
Results will be available to students two weeks after the submission date.

Weighting
20%

Assessment Criteria
Each quiz question is worth one (1) mark, which gives a total of twenty (20) marks or 20% for Assignment 2. Further details about Assignment 2 are available on the STAT11048 Moodle website.

Referencing Style

- Harvard (author-date)

Submission
Online

Submission Instructions
See the STAT11048 Moodle website for details about assignment submission.

Learning Outcomes Assessed

- Introduce the basic concepts of data handling and statistical analysis including some considerations of sampling theory.
- Introduce the concept of probability and to consider the applications of several probability distributions to the

solution of problems.
- Draw statistical conclusions about a population based on a sample of data using one sample, two sample and ANOVA tests.
- Use a calculator and computer software to perform statistical calculations.

Graduate Attributes

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

Examination

Outline
Complete an invigilated examination.

Date
During the examination period at a CQUniversity examination centre.

Weighting
60%

Length
180 minutes

Minimum mark or grade
40% (or 24 marks out of the 60 marks available on the exam)

Exam Conditions
Closed Book.

Materials
Calculator - all non-communicable calculators, including scientific, programmable and graphics calculators are authorised
Dictionary - non-electronic, concise, direct translation only (dictionary must not contain any notes or comments).

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