STAT11048 *Essential Statistics*
Term 2 - 2020

Profile information current as at 19/08/2022 05:21 pm

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 are 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 - 2020

- Brisbane
- Bundaberg
- Cairns
- Gladstone
- Mackay
- Melbourne
- Online
- 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. **Take Home Exam**
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 Unit evaluation

Feedback
Students highly value the delivery of the unit - the Moodle site and variety of resources available, especially the instructional videos.

Recommendation
Continue enhancing the resources available to students, increasing the amount of handwritten solutions and instructional videos.

Feedback from Student and teaching staff feedback

Feedback
Students appreciated the quizzes, however the lack of feedback during the quizzes limits the opportunity to learn from mistakes

Recommendation
Enhance the set of quiz questions, and review the timing and feedback in quizzes

Feedback from Unit evaluation

Feedback
Positive comments on the structure of the Unit.

Recommendation
Continue with the current structure of the unit content on the unit Moodle site.

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 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%	•	•		•

Assessment Tasks	Learning Outcomes			
	1	2	3	4
2 - Written Assessment - 20%	•	•	•	•
3 - Take Home Exam - 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 - Take Home Exam - 60%		•	•	•		•		•		

Textbooks and Resources

Textbooks

STAT11048

Prescribed

STAT11048 Study Guide
4th edition (2019)
Authors: Ross Shepherd
CQUniversity Publishing
Rockhampton , Queensland , Australia
Binding: Paperback
STAT11048

Supplementary

Business Statistics, Abridged: Australia & New Zealand
7th edition (2017)
Authors: E. A. Selvanathan, S. Selvanathan and G.Keller
Cengage Learning Australia Pty Ltd
Melbourne , Victoria , Australia
ISBN: 9780170369473
Binding: Paperback

Additional Textbook Information
If you prefer to study with a paper copy you can purchase at the CQUni Bookshop here: http://bookshop.cqu.edu.au (search on the Unit code). eBooks can be purchased at the publisher's website.

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
- Access to a webcam, speaker and microphone or a headset. (For participating in Zoom lectures and tutorials.)
- Access to a printer and document scanner. (Tutorial materials need to be printed and final assessment will be submitted electronically.)

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 - 13 Jul 2020

Module/Topic	Chapter	Events and Submissions/Topic

Introduction to Statistics	Study Guide - Chapter 1 Selvanathan Textbook - Chapters 1 & 3, plus Chapter 2 (Sections 2.1 & 2.2 only)	Watch lecture videos and do tutorial exercises for Week 1.
Week 2 - 20 Jul 2020		
Module/Topic	**Chapter**	**Events and Submissions/Topic**
Data Distributions	Study Guide - Chapter 2 Selvanathan Textbook - Chapter 4 (Section 4.1 only)	Watch lecture videos and do tutorial exercises for Week 2.
Week 3 - 27 Jul 2020		
Module/Topic	**Chapter**	**Events and Submissions/Topic**
Central Tendency and Dispersion	Study Guide - Chapter 3 Selvanathan Textbook - Chapter 5 (all Sections except 5.5)	Watch lecture videos and do tutorial exercises for Week 3.
Week 4 - 03 Aug 2020		
Module/Topic	**Chapter**	**Events and Submissions/Topic**
Counting Principles and Probability	Study Guide - Chapter 4 Selvanathan Textbook - Chapter 6 (all Sections except 6.5)	Watch lecture videos and do tutorial exercises for Week 4.
Week 5 - 10 Aug 2020		
Module/Topic	**Chapter**	**Events and Submissions/Topic**
Discrete Probability Distributions	Study Guide - Chapter 5 Selvanathan Textbook - Chapter 7 (all Sections except 7.4 & 7.5)	Watch lecture videos and do tutorial exercises for Week 5. **Assignment 1 Quiz** Due: Week 5 Friday (14 Aug 2020) 11:45 pm AEST
Vacation Week - 17 Aug 2020		
Module/Topic	**Chapter**	**Events and Submissions/Topic**
Week 6 - 24 Aug 2020		
Module/Topic	**Chapter**	**Events and Submissions/Topic**
Continuous Probability Distributions	Study Guide - Chapter 6 Selvanathan Textbook - Chapter 8 (all Sections except 8.4)	Watch lecture videos and do tutorial exercises for Week 6.
Week 7 - 31 Aug 2020		
Module/Topic	**Chapter**	**Events and Submissions/Topic**
Sampling and Sampling Distributions	Study Guide - Chapter 7 Selvanathan Textbook - Chapter 2 (Sections 2.3 to 2.5), plus Chapter 9 (Sections 9.1 to 9.4 & 9.6)	Watch lecture videos and do tutorial exercises for Week 7.
Week 8 - 07 Sep 2020		
Module/Topic	**Chapter**	**Events and Submissions/Topic**
Estimation	Study Guide - Chapter 8 Selvanathan Textbook - Chapter 10 (all Sections)	Watch lecture videos and do tutorial exercises for Week 8.
Week 9 - 14 Sep 2020		
Module/Topic	**Chapter**	**Events and Submissions/Topic**
Hypothesis Tests for a Population Mean or Proportion	Study Guide - Chapter 9 Selvanathan Textbook - Chapter 12 (all Sections except 12.5)	Watch lecture videos and do tutorial exercises for Week 9. **Assignment 2 Quiz** Due: Week 9 Friday (18 Sept 2020) 11:45 pm AEST

Week 10 - 21 Sep 2020

Module/Topic	Chapter	Events and Submissions/Topic
Hypothesis Tests for Two or More Population Means	Study Guide - Chapter 10 Selvanathan Textbook - Chapter 13 (Sections 13.1 & 13.2 only)	Watch lecture videos and do tutorial exercises for Week 10.

Week 11 - 28 Sep 2020

Module/Topic	Chapter	Events and Submissions/Topic
Linear Regression and Correlation	Study Guide - Chapter 12 Selvanathan Textbook - Chapter 4 (Section 4.3 only), plus Chapter 15 (Sections 15.1 to 15.3, & read parts of 15.4 & 15.6)	Watch lecture videos and do tutorial exercises for Week 11.

Week 12 - 05 Oct 2020

Module/Topic	Chapter	Events and Submissions/Topic
Chi-Square Tests	Study Guide - Chapter 11 Selvanathan Textbook - Chapter 14 (all Sections)	Watch lecture videos and do tutorial exercises for Week 12.

Review/Exam Week - 12 Oct 2020

Module/Topic	Chapter	Events and Submissions/Topic

Exam Week - 19 Oct 2020

Module/Topic	Chapter	Events and Submissions/Topic

Term Specific Information

Contact information for the Unit Coordinator: Lynne Campbell.
email: l.campbell@cqu.edu.au
I am based in Gladstone. If you have any queries, please contact me by emai. I will reply 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 (14 Aug 2020) 11:45 pm AEST
Submit in Week 5 by 11pm on Friday.

Return Date to Students
Week 7 Friday (4 Sept 2020)
Results will be available to students two weeks after the submission date. Consequently extension requests greater than 14 days will be denied except under exceptional circumstances.

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 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 (18 Sept 2020) 11:45 pm AEST
Submit in Week 9 by 11pm on Friday

Return Date to Students
Week 11 Friday (2 Oct 2020)
Results will be available to students two weeks after the submission date. Consequently extension requests greater than 14 days will be denied except under exceptional circumstances.

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 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

3 Take Home Exam

Assessment Type
Take Home Exam

Task Description
You will be able to access the take home exam paper from the Moodle website for STAT11048 under the Assessment block. To complete this Take Home Exam paper, you will need access to a printer and a scanner.
Completion of this take home exam paper is limited to a duration of 24 hours. This duration will allow you to:

- print the assessment
- develop solutions to the posed questions
- scan the solutions to a suitable file format
- upload and submit to the Term 2, 2020 STAT11048 Moodle site

The 24 hour duration is a strict deadline. Submission of this take home exam paper will not be accepted once this deadline has passed.
Your submission is subject to additional verification in the form of oral defence through interview with the Unit Coordinator (or nominee). Students who are unable to satisfactorily answer questions about their submitted solution(s) will receive no marks for those solution(s).
This is an individual assignment. Students are reminded that all aspects of work submitted are to be the results of their own personal studies.
Further details on the availability and submission of the take home exam paper will be available on STAT11048 Moodle website.

Assessment Due Date

The Take Home Exam will be scheduled during the examination period. The specific date and time to be advised via Moodle.

Return Date to Students

The results will be made available on Certification of Grades day. Like a regular exam, your marked answer script will not be returned to you, unless you apply to see it as part of the first step of the review of grade process.

Weighting
60%

Minimum mark or grade
Minimum percentage of examination marks required to pass unit - 40% (or 24 of the 60 marks available on the exam)

Assessment Criteria
This assessment task is open book. You can reference all notes and study materials. Any submission after the deadline will not be accepted. You are required to do your own work, maintaining academic integrity with all honesty. Your submission may be subject to additional verification in the form of an oral defence through interview with the Unit Coordinator (or nominee). Students unable to satisfactorily answer questions about their submitted solution(s) will receive no marks for these solutions(s).
Answered questions are awarded the full marks allocated if they are error-free, partial marks if there are some problems, and no marks if not attempted or contain so many errors as to render the attempt to be without value. To ensure maximum benefit, answers to all questions should be neatly and clearly presented and all appropriate working should be shown.

Referencing Style

- Harvard (author-date)

Submission
Online

Submission Instructions
The Take Home Exam is uploaded as a single document at the unit Moodle site for STAT11048. Full details are provided on the unit Moodle site.

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 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

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

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