



# ACCG615

## Quantitative Methods

S1 Day 2016

*Dept of Accounting & Corporate Governance*

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## General Information

Unit convenor and teaching staff

Unit Convener

Dr Peter Peter Kavalamthara

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TBD

Credit points

4

Prerequisites

Admission to MAcc(CPA) or MAcc(Prof) or MAcc(Prof)MCom or MIntAccg

Corequisites

Co-badged status

Unit description

This unit provides a sophisticated level of understanding and application of the quantitative and statistical techniques which are frequently used in accounting and financial studies. It develops logical reasoning, objective analysis, and the ability to make inferences based on empirical evidence. By the end of the unit students will be able to understand and apply statistical techniques such as probability, sampling, measurement, correlation, regression and hypothesis testing.

## Important Academic Dates

Information about important academic dates including deadlines for withdrawing from units are available at <https://www.mq.edu.au/study/calendar-of-dates>

## Learning Outcomes

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

Understand the general principles of sampling and study design.

Summarise data graphically and numerically using appropriate techniques.

Interpret questions which require statistical analysis and recognise the appropriate statistical procedure to apply in each case.

Use a statistical package to analyse data and answer research questions. Interpret statistical output and write up reports based on the output.

Use critical thinking and problem solving skills to deal with scenarios involving statistics.

Work cooperatively as a team member to develop communication and problem solving skills.

## Assessment Tasks

| Name                  | Weighting | Due                           |
|-----------------------|-----------|-------------------------------|
| <u>Assignment</u>     | 10%       | Week 10                       |
| <u>Online Quizzes</u> | 10%       | Weekly                        |
| <u>Class Test</u>     | 20%       | Week 13                       |
| <u>Final Exam</u>     | 60%       | University Examination Period |

### Assignment

Due: **Week 10**

Weighting: **10%**

The assignment should be completed in a group of four students. It is expected that each student will work on the assignment independently in the first instance and discuss their solution with their group members before writing up a joint assignment for submission. See information on group work under Delivery and Resources.

Assignment must be submitted online and uploaded to iLearn in pdf format.

There will be a deduction of 20% of the total available marks made from the total awarded mark for submissions up to 1 hour late and 50% deduction of the total available marks made from the total awarded mark for submissions more than 1 hour and up to 24 hours late. No submissions will be accepted more than 24 hours after the due date and time.

On successful completion you will be able to:

- Understand the general principles of sampling and study design.
- Summarise data graphically and numerically using appropriate techniques.
- Interpret questions which require statistical analysis and recognise the appropriate statistical procedure to apply in each case.
- Use a statistical package to analyse data and answer research questions. Interpret statistical output and write up reports based on the output.
- Use critical thinking and problem solving skills to deal with scenarios involving statistics.
- Work cooperatively as a team member to develop communication and problem solving skills.

## Online Quizzes

Due: **Weekly**

Weighting: **10%**

There will be 12 online quizzes.

Six of the online quizzes will be Practical Quizzes. Practical Quiz 1 will be due in Week 1 and is a demonstration quiz which will not count towards the final assessment. Practical Quizzes 2 to 6 will be due in weeks 3, 5, 7, 9 and 12. These quizzes will be worth 1% each. These online practical quizzes using MINITAB are to be completed every two weeks and are designed to test students' use of the statistical package, MINITAB.

The other six of the online quizzes will be Diagnostic Quizzes. These will be short answer quizzes. Diagnostic Quiz 1 will be due in Week 2 and is also a demonstration quiz which will not count towards the final assessment. Diagnostic Quizzes 2 to 6 will be due in weeks 4, 6, 8, 10 and 12. These quizzes will be worth 1% each. These Diagnostic Quizzes are provided to students to give feedback on their progress.

Correct answers will be provided at the closure of each quiz.

No extensions will be granted for online quizzes. Students who have not submitted an online quiz prior to the deadline will be awarded a mark of ZERO for the task, except for cases in which an application for special consideration is made and approved.

On successful completion you will be able to:

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## Class Test

Due: **Week 13**

Weighting: **20%**

This is an online test. The test will be of 50 minutes duration and will be held during class in Week 13. Students must sit the test in their allocated class. Students will be assessed and graded on topics from Weeks 1 to 12.

Marks will be recorded on iLearn.

In a case where special consideration is made and approved for the class test, a supplementary test will be held.

On successful completion you will be able to:

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- Use critical thinking and problem solving skills to deal with scenarios involving statistics.

## Final Exam

Due: **University Examination Period**

Weighting: **60%**

A final examination is included as an assessment task for this unit to provide assurance that:

- i. the product belongs to the student and
- ii. the student has attained the knowledge and skills tested in the exam.

A 3 hour final examination for this unit will be held during the University Examination period. Students are permitted to take one A4 page of notes, handwritten on both sides, into the exam. It should be noted that students must pass the final exam in order to pass the unit, regardless of their performance on other assessment tasks.

You are expected to present yourself for examination at the time and place designated in the University Examination Timetable. The timetable will be available in Draft form approximately eight weeks before the commencement of the examinations and in Final form approximately four weeks before the commencement of the exams.

The only exception to not sitting an examination at the designated time is because of documented illness or unavoidable disruption. In these circumstances you may wish to notify the University of Disruption to Studies. A link to the University's Disruption to Studies Policy and Procedure is available in the Policies and Procedures section in this Unit Guide.

If a Supplementary Examination is granted as a result of the Disruption to Studies process the examination will be scheduled after the conclusion of the official examination period.

The Macquarie university examination policy details the principles and conduct of examinations at the University. Links to all relevant policies may be found in the Policies and Procedures section of the Unit Guide.

On successful completion you will be able to:

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- Interpret questions which require statistical analysis and recognise the appropriate

statistical procedure to apply in each case.

- Use a statistical package to analyse data and answer research questions. Interpret statistical output and write up reports based on the output.
- Use critical thinking and problem solving skills to deal with scenarios involving statistics.

## Delivery and Resources

### Contacting staff

Where possible, staff will answer questions by email. Students experiencing significant difficulties with any topic in the unit should seek assistance immediately. Staff will advise their consultation hours on iLearn at the beginning of semester.

### Classes

There are three hours face-to-face teaching per week consisting of a mixture of lecture and practical classes. The timetable for classes can be found at: <http://www.timetables.mq.edu.au/>

### Required and Recommended texts and/or materials

#### Required Text:

Selvanathan, E.A., Selvanathan, S. & Keller, G. (2014) Business Statistics: Australia/New Zealand (6th Edition). Cengage Learning Australia. The textbook is also available as an ebook at: <http://www.cengagebrain.com.au/shop/en/AU/storefront/australia?cmd=CLHeaderSearch&fieldValue=9780170237000>

#### Recommended Texts:

Statistics for Management and Economics by Keller, G.

The Practice of Business Statistics by Moore, McCabe, Duckworth & Alwan

Australasian Business Statistics by Black, et al

### Technology Used and Required

All online assessment tasks will be made available through iLearn. Access to a personal computer is required to complete tasks on iLearn. The statistical package MINITAB 17 will be used and students will learn to analyse data using MINITAB. The package can be downloaded onto students' home computers from the Student Portal.

### Unit Web Page

The web page for this unit can be found at: [http://www.accg.mq.edu.au/postgraduate/course\\_units/accg615](http://www.accg.mq.edu.au/postgraduate/course_units/accg615)

Unit materials, assignments, solutions, announcements and other relevant information can be found on Moodle and students should visit this site regularly at: <http://iLearn.mq.edu.au>

### Learning and Teaching Activities

New material will be introduced in each lecture. During practical classes students will work on problems based on the material presented in lectures and write up relevant summaries of

results. Students are expected to have read through the material to be covered in class each week. Course material will be made available online using iLearn.

A week-by-week list of the topics is provided in this Unit Guide

### **Expectations and Workload**

Students are expected to spend 150 hours working on this unit. As a guide a student should spend these approximate amounts of time on each of the following activities:

|   | Activities                             | Hours |
|---|--|-------|
| 1 | Weekly Lectures/Practicals             | 39    |
| 2 | Assessment Task 1 (Practical Quizzes)  | 18    |
| 3 | Assessment Task 2 (Diagnostic Quizzes) | 18    |
| 4 | Assessment Task 3 (Assignment)         | 25    |
|   |  |       |
| 5 | Assessment Task 4 (Class Test)         | 10    |
| 6 | Readings/self-study                    | 40    |
|   | TOTAL                                  | 150   |

### **Group Assessment**

A group assessment task prepared and presented as a single entity where the contributions of individual students cannot be identified are to be graded on a pass/fail basis, and limited to 30% of the total assessment for the unit. A group assessment task prepared and presented as a single entity where the contributions of individual students can be identified are not limited to this grading restrictions. Assignment for ACCG615 is to be completed and submitted online in groups of up to four students. ACCG615 students will be required to complete a Group Agreement/Formation Form in order to encourage commitment on the part of all group members, as well as a Self and Peer Assessment form so that the contribution of individual students can be identified.

### **Lecture Recordings**

The last timetabled lecture will be recorded each week and will be available on iLearn at the end of each week.

### **IT Conditions of Use**

Access to all student computing facilities within the Faculty of Business and Economics is restricted to authorised coursework for approved units. Student ID cards must be displayed in the locations provided at all times.

Students are expected to act responsibly when using University IT facilities. The following regulations apply to the use of computing facilities and online services:

Accessing inappropriate web sites or downloading inappropriate material is not permitted. Material that is not related to coursework for approved units is deemed inappropriate.

Downloading copyright material without permission from the copyright owner is illegal, and strictly prohibited. Students detected undertaking such activities will face disciplinary action, which may result in criminal proceedings.

Non-compliance with these conditions may result in disciplinary action without further notice.

Students must use their Macquarie University email addresses to communicate with staff as it is University policy that the University issued email account is used for official University communication.

## Unit Schedule

| Week Commencing                             | Week | Topics Covered                                     | Textbook Chapter  | Assessments Due |
|---|------|--|---|-----------------|
| 29 February                                 | 1    | Introduction to Statistics<br>Graphical Techniques | 1, 2 and 3<br>4 (omit pp89-91, 97-99, 4.2)<br>(4.4 is optional) | PQ1             |
| 7 March                                     | 2    | Numerical Summaries                                | 5 (omit pp152-153, 5.4, 5.5)                                    | DQ1             |
| 14 March                                    | 3    | Probability<br>Probability Distributions           | 6 (omit 6.5)<br>7 (omit 7.4, 7.5, 7.7)<br>8 (omit 8.4)          | PQ2             |
| 21 March                                    | 4    | Sampling Distributions                             | 9<br>10   | DQ2             |
| 28 March                                    | 5    | Estimation<br>Confidence Intervals                 | 11 (omit 11.5)<br>12 (omit 12.3, 12.4)                          | PQ3             |
| 4 April                                     | 6    | Testing Hypotheses:<br>Single Samples              | 13 (omit 13.5, 13.6)<br>21 (21.2)                               | DQ3             |
| <b>Semester break: 11 April to 22 April</b> |      |  |   |                 |



|          |    |  |  |                |
|----------|----|--|--|----------------|
| 25 April | 7  | Testing Hypotheses:<br>Two Samples             | 14 (omit 14.3)   | PQ4            |
| 2 May    | 8  | Analysis of Variance                           | 16 (16.1, 16.2)<br>21 (21.3: KW test only)   | DQ4            |
| 9 May    | 9  | Categorical Data Analysis                      | 13 (13.6)<br>17 (17.3 is optional)   | PQ5            |
| 16 May   | 10 | Simple Linear Regression                       | 18 (omit 18.3, pp728-730, 18.5,<br>18.6)   | DQ5 Assignment |
| 23 May   | 11 | Assessing Linear Models<br>Multiple Regression | 5 (5.5)<br>18 (18.4, 18.5, 18.6)<br>19 (omit pp778-779, 19.4)<br>Lecture notes for model reduction |                |
| 30 May   | 12 | Multiple Regression<br>continued               | 20 (omit 20.4, 20.6)   | PQ6, DQ6       |
| 6 June   | 13 | Revision                                       | 22   | Class test     |
|          |    |  |  |                |

**There will be no classes on Friday, 25 March, Monday 28 March and Monday 25 April 2016 due to Public Holidays. Students who are enrolled in classes on these dates should attend any other lecture/tutorial of the unit during that week. The 6-9 pm class on Tuesday 5 April will be held from 6-9 pm on 15 April.**

## Policies and Procedures

Macquarie University policies and procedures are accessible from [Policy Central](#). Students should be aware of the following policies in particular with regard to Learning and Teaching:

Academic Honesty Policy [http://mq.edu.au/policy/docs/academic\\_honesty/policy.html](http://mq.edu.au/policy/docs/academic_honesty/policy.html)

**New Assessment Policy in effect from Session 2 2016** [http://mq.edu.au/policy/docs/assessment/policy\\_2016.html](http://mq.edu.au/policy/docs/assessment/policy_2016.html). For more information visit [http://students.mq.edu.au/events/2016/07/19/new\\_assessment\\_policy\\_in\\_place\\_from\\_session\\_2/](http://students.mq.edu.au/events/2016/07/19/new_assessment_policy_in_place_from_session_2/)

Assessment Policy prior to Session 2 2016 <http://mq.edu.au/policy/docs/assessment/policy.html>

Grading Policy prior to Session 2 2016 <http://mq.edu.au/policy/docs/grading/policy.html>

Grade Appeal Policy <http://mq.edu.au/policy/docs/gradeappeal/policy.html>

Complaint Management Procedure for Students and Members of the Public [http://www.mq.edu.au/policy/docs/complaint\\_management/procedure.html](http://www.mq.edu.au/policy/docs/complaint_management/procedure.html)

Disruption to Studies Policy [http://www.mq.edu.au/policy/docs/disruption\\_studies/policy.html](http://www.mq.edu.au/policy/docs/disruption_studies/policy.html) *The Disruption to Studies Policy is effective from March 3 2014 and replaces the Special Consideration Policy.*

In addition, a number of other policies can be found in the [Learning and Teaching Category](#) of Policy Central.

## Student Code of Conduct

Macquarie University students have a responsibility to be familiar with the Student Code of Conduct: [https://students.mq.edu.au/support/student\\_conduct/](https://students.mq.edu.au/support/student_conduct/)

## Results

Results shown in *iLearn*, or released directly by your Unit Convenor, are not confirmed as they are subject to final approval by the University. Once approved, final results will be sent to your student email address and will be made available in [eStudent](#). For more information visit [ask.mq.edu.au](http://ask.mq.edu.au).

## Grades

Macquarie University uses the following grades in coursework units of study:

HD - High Distinction

D - Distinction

CR - Credit

P - Pass

F - Fail

Grade descriptors and other information concerning grading are contained in the Macquarie University Grading Policy which is available at:

<http://www.mq.edu.au/policy/docs/grading/policy.html>

## Grading Appeals and Final Examination Script Viewing

If, at the conclusion of the unit, you have performed below expectations, and are considering lodging an appeal of grade and/or viewing your final exam script please refer to the following

website which provides information about these processes and the cut off dates in the first instance. Please read the instructions provided concerning what constitutes a valid grounds for appeal before appealing your grade.

[http://www.businessandconomics.mq.edu.au/new\\_and\\_current\\_students/undergraduate\\_current\\_students/how\\_do\\_i/grade\\_appeals/](http://www.businessandconomics.mq.edu.au/new_and_current_students/undergraduate_current_students/how_do_i/grade_appeals/)

## Student Support

Macquarie University provides a range of support services for students. For details, visit <http://students.mq.edu.au/support/>

## Learning Skills

Learning Skills ([mq.edu.au/learningskills](http://mq.edu.au/learningskills)) provides academic writing resources and study strategies to improve your marks and take control of your study.

- [Workshops](#)
- [StudyWise](#)
- [Academic Integrity Module for Students](#)
- [Ask a Learning Adviser](#)

## Student Services and Support

Students with a disability are encouraged to contact the [Disability Service](#) who can provide appropriate help with any issues that arise during their studies.

## Student Enquiries

For all student enquiries, visit Student Connect at [ask.mq.edu.au](http://ask.mq.edu.au)

## IT Help

For help with University computer systems and technology, visit [http://www.mq.edu.au/about\\_us/offices\\_and\\_units/information\\_technology/help/](http://www.mq.edu.au/about_us/offices_and_units/information_technology/help/).

When using the University's IT, you must adhere to the [Acceptable Use of IT Resources Policy](#). The policy applies to all who connect to the MQ network including students.

## Graduate Capabilities

### Capable of Professional and Personal Judgement and Initiative

We want our graduates to have emotional intelligence and sound interpersonal skills and to demonstrate discernment and common sense in their professional and personal judgement. They will exercise initiative as needed. They will be capable of risk assessment, and be able to handle ambiguity and complexity, enabling them to be adaptable in diverse and changing environments.

This graduate capability is supported by:

## Learning outcomes

- Understand the general principles of sampling and study design.
- Summarise data graphically and numerically using appropriate techniques.
- Interpret questions which require statistical analysis and recognise the appropriate statistical procedure to apply in each case.
- Use a statistical package to analyse data and answer research questions. Interpret statistical output and write up reports based on the output.
- Use critical thinking and problem solving skills to deal with scenarios involving statistics.
- Work cooperatively as a team member to develop communication and problem solving skills.

## Assessment task

- Assignment

## Discipline Specific Knowledge and Skills

Our graduates will take with them the intellectual development, depth and breadth of knowledge, scholarly understanding, and specific subject content in their chosen fields to make them competent and confident in their subject or profession. They will be able to demonstrate, where relevant, professional technical competence and meet professional standards. They will be able to articulate the structure of knowledge of their discipline, be able to adapt discipline-specific knowledge to novel situations, and be able to contribute from their discipline to inter-disciplinary solutions to problems.

This graduate capability is supported by:

## Learning outcomes

- Understand the general principles of sampling and study design.
- Summarise data graphically and numerically using appropriate techniques.
- Interpret questions which require statistical analysis and recognise the appropriate statistical procedure to apply in each case.
- Use a statistical package to analyse data and answer research questions. Interpret statistical output and write up reports based on the output.
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- Work cooperatively as a team member to develop communication and problem solving skills.

## Assessment tasks

- Assignment
- Online Quizzes

- Class Test
- Final Exam

## Critical, Analytical and Integrative Thinking

We want our graduates to be capable of reasoning, questioning and analysing, and to integrate and synthesise learning and knowledge from a range of sources and environments; to be able to critique constraints, assumptions and limitations; to be able to think independently and systemically in relation to scholarly activity, in the workplace, and in the world. We want them to have a level of scientific and information technology literacy.

This graduate capability is supported by:

### Learning outcomes

- Understand the general principles of sampling and study design.
- Summarise data graphically and numerically using appropriate techniques.
- Interpret questions which require statistical analysis and recognise the appropriate statistical procedure to apply in each case.
- Use a statistical package to analyse data and answer research questions. Interpret statistical output and write up reports based on the output.
- Use critical thinking and problem solving skills to deal with scenarios involving statistics.
- Work cooperatively as a team member to develop communication and problem solving skills.

### Assessment tasks

- Assignment
- Online Quizzes
- Class Test
- Final Exam

## Problem Solving and Research Capability

Our graduates should be capable of researching; of analysing, and interpreting and assessing data and information in various forms; of drawing connections across fields of knowledge; and they should be able to relate their knowledge to complex situations at work or in the world, in order to diagnose and solve problems. We want them to have the confidence to take the initiative in doing so, within an awareness of their own limitations.

This graduate capability is supported by:

### Learning outcomes

- Understand the general principles of sampling and study design.
- Summarise data graphically and numerically using appropriate techniques.

- Interpret questions which require statistical analysis and recognise the appropriate statistical procedure to apply in each case.
- Use a statistical package to analyse data and answer research questions. Interpret statistical output and write up reports based on the output.
- Use critical thinking and problem solving skills to deal with scenarios involving statistics.
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## **Assessment tasks**

- Assignment
- Online Quizzes
- Class Test
- Final Exam

## **Research and Practice, Global and Sustainability**

This unit addresses global and sustainability issues as direct areas of study and as necessary implications arising from the materials, assessment and academic discussion and debate in classes. We promote sustainability by developing ability in students to research and locate information within the statistics discipline. We aim to provide students with an opportunity to obtain skills which will benefit them throughout their career.

The unit materials have a reference list at the end of each lecture containing all references cited by the author. These provide some guidance to references that could be used to research particular issues.