



# ACCG615

## Quantitative Methods

S2 Day 2014

*Dept of Accounting & Corporate Governance*

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## General Information

### Unit convenor and teaching staff

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### Credit points

4

### Prerequisites

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

### Corequisites

### Co-badged status

### Unit description

This unit is intended to provide a sophisticated level of understanding and application of the quantitative and statistical techniques which are frequently used in accounting and financial studies. This unit develops logical reasoning, objective analysis, and inferences based on empirical evidence. Statistical techniques such as probability, sampling, measurement, correlation, regression and hypothesis testing are covered and applied.

## 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>Assignments</u>	10%	Weeks 7 and 12
<u>Online Quizzes</u>	10%	Weekly
<u>Class Test</u>	20%	Week 13
<u>Final Exam</u>	60%	University Examination Period

### Assignments

Due: **Weeks 7 and 12**

Weighting: **10%**

These assignments are due in weeks 7 and 12. Each assignment is worth 5%. Each assignment is to be completed in a group of four students. It is expected that each student will work on each assignment independently in the first instance and discuss their solution with their group members before writing up a joint assignment for submission.

Assignments 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.

Model solutions will be made available on iLearn.

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.

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.

## Class Test

Due: **Week 13**

Weighting: **20%**

This is an online test using the statistical package, MINITAB.

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 provided on iLearn.

On successful completion you will be able to:

- 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.

## 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.

The University Examination period in Session 2, 2014 is from 17 November to 5 December.

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:

- 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.

## **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 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**

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

### 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	Assessment Due
4 August	1	Introduction to Statistics Graphical Techniques	1, 2 and 3 4 (omit pp89-91, 97-99, 4.2) (4.4 is optional)	PQ1
11 August	2	Numerical Summaries	5 (omit pp152-153, 5.4, 5.5)	DQ1
18 August	3	Probability Probability Distributions	6 (omit 6.5) 7 (omit 7.4, 7.5, 7.7) 8 (omit 8.4)	PQ2

25 August	4	Sampling Distributions	9 10	DQ2
1 September	5	Estimation Confidence Intervals	11 (omit 11.5) 12 (omit 12.3, 12.4)	PQ3
8 September	6	Testing Hypotheses: Single Samples	13 (omit 13.5, 13.6) 21 (21.2)	DQ3
15 September	7	Testing Hypotheses: Two Samples	14 (omit 14.3) 21 (21.1)	PQ4 Assignment 1
<i>Semester Break: 20 September to 5 October</i>				
7 October <i>note: Monday 6 October is a public holiday</i>	8	Analysis of Variance	16 (16.1, 16.2) 21 (21.3: KW test only)	DQ4
13 October	9	Categorical Data Analysis	13 (13.6) 17 (17.3 is optional)	PQ5
20 October	10	Simple Linear Regression	18 (omit 18.3, pp728-730, 18.5, 18.6)	DQ5
27 October	11	Assessing Linear Models Multiple Regression	5 (5.5) 18 (18.4, 18.5, 18.6) 19 (omit pp778-779, 19.4) Lecture notes for model reduction	Assignment 2
3 November	12	Multiple Regression continued	20 (omit 20.4, 20.6)	PQ6, DQ6
10 November	13	Revision	22	Class test using MINITAB package



## 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)

Assessment Policy <http://mq.edu.au/policy/docs/assessment/policy.html>

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

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

Grievance Management Policy [http://mq.edu.au/policy/docs/grievance\\_management/policy.html](http://mq.edu.au/policy/docs/grievance_management/policy.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/)

## 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://informatics.mq.edu.au/help/>.

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

## Graduate Capabilities

### PG - Discipline Knowledge and Skills

Our postgraduates will be able to demonstrate a significantly enhanced depth and breadth of knowledge, scholarly understanding, and specific subject content knowledge in their chosen

fields.

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

- Assignments
- Online Quizzes
- Class Test
- Final Exam

## PG - Critical, Analytical and Integrative Thinking

Our postgraduates will be capable of utilising and reflecting on prior knowledge and experience, of applying higher level critical thinking skills, and of integrating and synthesising learning and knowledge from a range of sources and environments. A characteristic of this form of thinking is the generation of new, professionally oriented knowledge through personal or group-based critique of practice and theory.

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

- Assignments
- Online Quizzes
- Class Test
- Final Exam

## PG - Research and Problem Solving Capability

Our postgraduates will be capable of systematic enquiry; able to use research skills to create new knowledge that can be applied to real world issues, or contribute to a field of study or practice to enhance society. They will be capable of creative questioning, problem finding and problem solving.

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

- Assignments
- Online Quizzes
- Class Test
- Final Exam

## PG - Capable of Professional and Personal Judgment and Initiative

Our postgraduates will demonstrate a high standard of discernment and common sense in their professional and personal judgment. They will have the ability to make informed choices and decisions that reflect both the nature of their professional work and their personal perspectives.

This graduate capability is supported by:

## Learning outcomes

- Understand the general principles of sampling and study design.
- 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

- Assignments

## Research and Practice

This unit gives you opportunities to conduct your own research and gives you practice in applying research findings in your assessments.

This unit uses research from external sources to support your learning of concepts, techniques and technologies taught in this unit.