STAT150

Business Statistics

S3 Day 2017

Dept of Statistics

Contents

General Information 2

Learning Outcomes 2

General Assessment Information 2

Assessment Tasks 3

Delivery and Resources 5

Unit Schedule 6

Learning and Teaching Activities 7

Policies and Procedures 9

Graduate Capabilities 10

Disclaimer

Macquarie University has taken all reasonable measures to ensure the information in this publication is accurate and up-to-date. However, the information may change or become out-dated as a result of change in University policies, procedures or rules. The University reserves the right to make changes to any information in this publication without notice. Users of this publication are advised to check the website version of this publication [or the relevant faculty or department] before acting on any information in this publication.

General Information

Unit convenor and teaching staff Lecturer Andrew Grant andrew.grant@mq.edu.au Level 6, 12 Wally's Walk
Credit points 3
Prerequisites
Corequisites
Co-badged status
Unit description Data is the foundation of sound business decisions. In this unit you will learn the fundamentals of analysing, solving and communicating business problems using quantitative information. The unit will cover the statistical concepts that provide a foundation for the study of and professional practice in business and economics. The focus will be on tools and approaches that are used every day in business. Problems and examples will be drawn from current real-world experience.

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:

- organise and summarise data graphically and numerically
- use appropriate techniques to analyse data
- use Excel to manipulate and analyse data
- draw conclusions from the results of data analysis
- apply statistical techniques to problems arising from diverse fields of research

General Assessment Information

All assessments should be attempted and classes attended. Students who have approved absences from practical and/or tutorial classes are still expected to attend at least 8 out of 12

practical classes and at least 8 out of 12 tutorial classes (from day 2 to day 13).

The only excuse for missing a tutorial or practical class, an assessment (Class Test 1 or 2) or the final exam is because of documented illness or unavoidable disruption. In these special circumstances you may apply for Disruption to Studies via ask.mq.edu.au.

For approved disruption to class tests, you will be expected to attend the next available test as determined by the convener.

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.

Note that there is a University policy regarding Disruption to studies which can be found at: https://students.mq.edu.au/study/my-study-program/special-consideration/disruption-to-studies.

Assessment Tasks

Name	Weighting	Hurdle	Due
Tutorial Participation	10%	Yes	Daily
Practical Participation	0%	Yes	Daily
Class Test 1	15%	No	Day 7 Practical Class
Class Test 2	25%	No	Day 12 Practical Class
Final Examination	50%	No	University Examination Period

Tutorial Participation

Due: **Daily**
Weighting: **10%**
This is a hurdle assessment task (see assessment policy for more information on hurdle assessment tasks)

Tutorial participation is a hurdle requirement. Students must participate in at least 8 out of 12 tutorial classes from day 2 to day 13. Tutorial work must be handed to your tutor at the end of the class. Tutorial work from days 3,5,7,9 and 12 will be marked and each piece of work is worth 2%. Late submissions will not be accepted.

On successful completion you will be able to:

- organise and summarise data graphically and numerically
- use appropriate techniques to analyse data
- draw conclusions from the results of data analysis
- apply statistical techniques to problems arising from diverse fields of research

Practical Participation

Due: **Daily**
Weighting: **0%**
This is a hurdle assessment task (see assessment policy for more information on hurdle assessment tasks)

Practical participation is a hurdle requirement. Students must participate in at least 8 out of 12 practical classes. Participation will be recorded in class.

On successful completion you will be able to:

- organise and summarise data graphically and numerically
- use appropriate techniques to analyse data
- use Excel to manipulate and analyse data
- apply statistical techniques to problems arising from diverse fields of research

Class Test 1

Due: **Day 7 Practical Class**
Weighting: **15%**

Class Test 1 will be held in practical classes on day 7 (20th December). This test must be taken in the practical class in which you are registered. **Students must bring their student ID**. Failure to supply ID will mean exclusion from the test. A standard calculator may be taken into the class test (mobile phones and other devices with calculator apps are not permitted). No other material (apart from writing equipment) will be permitted in the class test. A supplementary class test will be given for students with an approved disruption to studies application.

On successful completion you will be able to:

- organise and summarise data graphically and numerically
- use appropriate techniques to analyse data
- use Excel to manipulate and analyse data
- draw conclusions from the results of data analysis
- apply statistical techniques to problems arising from diverse fields of research

Class Test 2

Due: **Day 12 Practical Class**
Weighting: **25%**

Class Test 2 will be held in practical classes on day 12 (15th January). This test must be taken in the practical class in which you are registered. **Students must bring their student ID**. Failure to supply ID will mean exclusion from the test. A standard calculator may be taken into the class test (mobile phones and other devices with calculator apps are not permitted). No other material

(apart from writing equipment) will be permitted in the class test. A supplementary class test will be given for students with an approved disruption to studies application.

On successful completion you will be able to:

- organise and summarise data graphically and numerically
- use appropriate techniques to analyse data
- use Excel to manipulate and analyse data
- draw conclusions from the results of data analysis
- apply statistical techniques to problems arising from diverse fields of research

Final Examination

Due: **University Examination Period**
Weighting: **50%**

The Final Examination will be a two hour written examination (plus ten minutes reading time) and will be held during the examination period which runs from 22nd January to 2nd February, 2018. A page of formulae will be provided with the final exam. Students will be permitted to take **one A4 sheet (any colour), handwritten on both sides** (using pens and/or pencils and highlighters) into the final examination. This sheet may contain any information deemed useful to the student and must be submitted with the final exam paper at the conclusion of the exam. A standard calculator may also be taken into the final examination (mobile phones and other devices with calculator apps are not permitted for use in the exam). See the day 13 iLearn area for more details on preparing for the final exam.

The University Examination timetable will be available before the commencement of the examinations at:http://www.timetables.mq.edu.au/

Students are advised that it is Macquarie University policy **not** to set early examinations for individuals or groups of students. All students are expected to ensure that they are available until the end of the teaching semester, i.e. the final day of the official examination period.

On successful completion you will be able to:

- organise and summarise data graphically and numerically
- use appropriate techniques to analyse data
- use Excel to manipulate and analyse data
- draw conclusions from the results of data analysis
- apply statistical techniques to problems arising from diverse fields of research

Delivery and Resources

Classes

Students should enrol in **and attend** the following classes each teaching day (Monday,

Wednesday and Friday of each week):

- 1 x 2 hour lecture beginning on day 1
- 1 x 1 hour tutorial beginning on day 1
- 1 x 1 hour practical beginning on day 2

The timetable for classes can be found on the University web site at: http://www.timetables.mq.edu.au

Students can change their tutorial and practical classes by using eStudent at: https://student1.mq.edu.au/. Do not enrol in clashing classes!

Required and Recommended Texts and/or Materials

- A standard calculator should be brought to all classes.
- Excel 2013 (or a later version) for Microsoft Windows or Excel 2016 for Mac will be used throughout the unit. Students without one of these versions of Excel can download Excel 2016 (or the whole Office suite) from the University. See the University Wiki page for details. Please see Andrew during consultation times for help with installation problems, or visit IT help in the C5C building.

Required Text:

- *Business Statistics STAT150: A Custom Edition for Macquarie University* from *Business Statistics 3rd Edition Global Edition* by Sharpe, De Veaux and Velleman (ISBN 9781488616099). This book, with the MyStatLab key, will be used throughout this unit. It can be purchased in hard copy from the Coop Bookshop or directly from Pearson.

Technology Used and Required

All course material is delivered through iLearn (which is a version of Moodle). The link may be found at http://ilearn.mq.edu.au

Unit Schedule

DAY	DATE	LECTURE TOPIC	Assessments and Revision Quizzes
1	4/12	Introduction to statistics	
2	6/12	Summarising and displaying data	Revision quiz 1

3	8/12	Summarising and displaying data (continued)	Tutorial submission
4	11/12	Introduction to distributions: the normal distribution	Revision quiz 2
	13/12	No classes	
5	15/12	Sampling distributions and confidence intervals for proportions	Tutorial submission
6	18/12	Sampling distributions and confidence intervals for means	
7	20/12	One sample hypothesis tests for a population mean	Tutorial submission Revision quiz 3 Class Test 1
8	22/12	Hypothesis tests for comparing population means	
Session Break			
9	8/1	Simple linear regression (Part 1)	Tutorial submission
10	10/1	Simple linear regression (Part 2)	
11	12/1	Hypothesis tests for population proportions: z-test of a proportion and chi-squared goodness-of fit test	
12	15/1	Chi-squared test of independence	Tutorial submission Class Test 2
13	17/1	Review of STAT150	Revision quiz 4

Learning and Teaching Activities

Lectures

Lectures begin on day 1. Students should attend one 2-hour session each teaching day. Copies of the lecture slides will be made available via iLearn. Students are strongly advised to print out the lecture slides and bring these printout to lectures so that they can work through the material thoroughly. The lectures are also recorded via ‘echo360’, and can be accessed on iLearn (under Echo Recordings). Any student who misses a lecture must work through the Echo recording before he/she will be able to progress to the next lecture.

Tutorials

Tutorials begin on day 1. Each tutorial is based on work from the previous day's lecture. The aim of tutorials is to practise techniques and understand concepts learned in lectures. Tutorials are designed for students to work together in groups. The emphasis on group work is to explore ideas, devise and ask questions and plan ways to answer them. Tutorial material will be made available via iLearn. Students should print out their tutorial material and bring the printout to their tutorial. Exercises on days 3, 5, 7, 9 and 12 will be marked.

Practicals

Practical classes begin on day 2. Every teaching day throughout the session students will be required to work through practical material that teaches them how to apply the statistical techniques learned during lectures and tutorials by using Excel 13. The daily practical material is based on work from the previous day's lecture. Practical material, and the required Excel datasets, will be made available via iLearn. Students should print out their practical material (available on iLearn) and bring it to their practical session. Students preferring to use their own computers to do the practical work are encouraged to do so.

Online Revision Quizzes: Days 2, 4, 7 and 13

Four online quizzes will be available for revision puposes. These quizzes do not count towards final assessment marks. The quizzes are designed to give students an opportunity to practice theoretical, mechanical and interpretational aspects of statistics. The first quiz, should be attempted by day 2. It is designed to assess students' ability to cope with the mathematical content of STAT150. The other quizzes, which should be attempted on days 4, 7 and 13 are designed to help students revise and reinforce the concepts covered in lectures, tutorials and practicals, and to help students prepare for class tests and the final exam. Students are allowed an unlimited number of attempts at each test. Each test will open approximately two days before its scheduled time. Each time a student attempts a test, a new version of it will be generated. Students who have problems with quiz questions are encouraged to seek help during staff consultation hours, or from the Numeracy Centre.

Help with STAT150 related administrative matters

For help with STAT150 related administrative matters (such as class enrolment) students should email the lecturer.

Staff consultation (office) hours

Details of staff consultation times will be advised in the first lecture and posted on iLearn.

Numeracy Centre

The Numeracy Centre exists to help students who are experiencing difficulties with numeracy-based subjects such as STAT150. Any student who lacks the knowledge of mathematics needed for STAT150 is encouraged to seek the help of the Centre, which is located in E7B G88. The Centre offers a number of services including individual help, supplementary workshops and an

opportunity to meet with other students to discuss problems. STAT150 assumes knowledge of high school mathematics. Anyone without this knowledge should take a mathematics unit prior to enrolling in STAT150.

Computing Laboratories

Excel 13 will be used in practical sessions. Computing labs use iLab, so work undertaken must be saved to the iLab desktop and then emailed. Opening hours of computing laboratories during session: 8am - 10pm Mon-Fri 9am - 5pm Sat-Sun For opening hours during session breaks, see the notice boards outside the computing laboratories. Look for additional information on the whiteboards in the labs. Please note that computing labs may be booked for classes. Check the timetable on the door of the lab to make sure that the room is free.

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

Assessment Policy http://mq.edu.au/policy/docs/assessment/policy_2016.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

Disruption to Studies Policy (in effect until Dec 4th, 2017): http://www.mq.edu.au/policy/docs/disruption_studies/policy.html

Special Consideration Policy (in effect from Dec 4th, 2017): https://staff.mq.edu.au/work/strategy-planning-and-governance/university-policies-and-procedures/policies/special-consideration

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/

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.

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) 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

IT Help

For help with University computer systems and technology, visit 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

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

- organise and summarise data graphically and numerically
- use appropriate techniques to analyse data
- use Excel to manipulate and analyse data
- draw conclusions from the results of data analysis
- apply statistical techniques to problems arising from diverse fields of research

Assessment tasks

- Tutorial Participation
- Practical Participation
- Class Test 1
- Class Test 2
- Final Examination

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

- use appropriate techniques to analyse data
- use Excel to manipulate and analyse data
- draw conclusions from the results of data analysis
- apply statistical techniques to problems arising from diverse fields of research

Assessment tasks

- Tutorial Participation
- Practical Participation
- Class Test 1
- Class Test 2
- Final Examination

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

- use appropriate techniques to analyse data
- use Excel to manipulate and analyse data

- draw conclusions from the results of data analysis
- apply statistical techniques to problems arising from diverse fields of research

Assessment tasks

- Tutorial Participation
- Practical Participation
- Class Test 1
- Class Test 2
- Final Examination

Effective Communication

We want to develop in our students the ability to communicate and convey their views in forms effective with different audiences. We want our graduates to take with them the capability to read, listen, question, gather and evaluate information resources in a variety of formats, assess, write clearly, speak effectively, and to use visual communication and communication technologies as appropriate.

This graduate capability is supported by:

Learning outcomes

- organise and summarise data graphically and numerically
- apply statistical techniques to problems arising from diverse fields of research

Assessment tasks

- Tutorial Participation
- Practical Participation
- Class Test 1
- Class Test 2
- Final Examination