WSTA150

Business Statistics

MUIC Term 4 2016

Macquarie University International College

Contents

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
Teacher
Anne Karpin
anne.karpin@mq.edu.au
Contact via Email

Teacher
Jenny Middledorp
jenny.middledorp@mq.edu.au
Contact via Email

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 and mathematical 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 Excel to manipulate and analyse data.

Use appropriate techniques to analyse data.

Draw conclusions from the results of data analysis, write and present a report based on the results of a statistical analysis and apply statistical techniques to problems arising

from diverse fields of research.

Use discipline specific terminology to communicate concepts and ideas relevant to this unit.

General Assessment Information

Grading

Students will receive a Standardised Numerical Grade (SNG) that reflects the extent to which student attainment matches the descriptors as per the Macquarie University Grading Policy.. This unit will use the following grades which will be aligned with the listed numerical range:

- HD - High Distinction (85-100)
- D - Distinction (75-84)
- Cr - Credit (65-74)
- P - Pass (50-64)
- F - Fail (0-49)

Requirements to Pass

In order to pass this unit a student must:

- Pass the final examination or final assessment task
- Achieve a Standard Numerical Grade (SNG) of 50 or more in the unit
- Attend at least 80% of scheduled classes
- Attempt all assessment tasks in unit

For further details about grading, please refer to the Grading Policy.

Submission of Assessment Tasks

Assessments must be submitted following instructions provided in class. Assessment tasks which have not been submitted as required will not be marked. They will be considered a non-submission and zero marks will be awarded.

Turnitin

Turnitin compares electronically submitted papers to a database of academic publications, internet sources and other papers that have been submitted into the system to identify matching text. It then produces an Originality Report which identifies text taken from other sources and generates a similarity percentage to judge whether plagiarism has occurred (see Academic Honesty section below).

Multiple submissions may be possible via Turnitin prior to the due date of an assessment and originality reports may be made available to students. In such cases they should be used to check work for plagiarism prior to a final submission.

Where there is a requirement for assessment tasks to be submitted through Turnitin, it is the student's responsibility to ensure that work is submitted correctly prior to the due date. Hard

copies will not be accepted unless indicated otherwise by a teaching staff member. Records in Turnitin will be taken as records of submission. For assistance submitting through Turnitin, you may approach your teacher, lodge a OneHelp Ticket, refer to the IT help page or seek assistance from Student Connect.

Students should note that for a first time submission the Originality Report will be available immediately post submission but for any subsequent submissions it may take 24 hours or longer for the report to be generated. This may be after the due date so students should plan their submission carefully.

Missed Assessments

The University recognises that students may experience unexpected events and circumstances that adversely affect their academic performance in assessment activities, for example illness. In order to support students who have experienced a serious and unavoidable disruption, the University will provide affected students with an additional opportunity to demonstrate that they have met the learning outcomes of a unit. An additional opportunity provided under such circumstances is referred to as special consideration.

The Disruption to Studies Policy applies only to *serious and unavoidable* disruptions that arise after a study period has commenced. Students with a pre-existing disability/health condition or prolonged adverse circumstances may be eligible for ongoing assistance and support. Such support may be sought through Campus Wellbeing and Support Services.

Serious and Unavoidable Disruption The University classifies a disruption as **serious and unavoidable** if it:

- could not have reasonably been anticipated, avoided or guarded against by the student; and
- was beyond the student's control; and
- caused substantial disruption to the student's capacity for effective study and/or completion of required work; and
- occurred during an event critical study period and was at least three (3) consecutive days duration, and / or
- prevented completion of a final examination.

To be eligible for Special Consideration, a student must notify the University of a *serious and unavoidable* disruption within five (5) working days of the commencement of the disruption (Disruption to Studies notification).   All Disruption to Studies notifications are to be made online via the University's Ask MQ system. A Disruption to Studies notification must be supported by documentary evidence.

In submitting a Disruption to Studies notification, a student is acknowledging that they may be required to undertake additional work. The time and date, deadline or format of any required extra assessable work as a result of a disruption to studies notification is not negotiable and in submitting a disruption to studies notification, a student is agreeing to make themselves available to complete any extra work as required.

Please refer to the Disruption to Studies Policy for further details.

Extensions & Late Submissions

To apply for an extension of time for submission of an assessment item, students must submit a Disruptions to Studies notification via ask.mq.edu.au.

Late submissions without an approved extension are possible but will be penalised at 20% per day up to 4 days (weekend inclusive). If a student submits an assessment task 5 or more days after the due date without grounds for special consideration (See Disruptions to Studies Policy) a record or submission will be made but the student will receive zero marks for the assessment task.

Final Examinations and Final Assessment Tasks

Final exams and final assessments will typically take place in Week 6 or Monday of Week 7. All students enrolled in a teaching session are expected to ensure they are available up until and including Monday of Week 7 to undertake examinations. Passing the final exam or final assessment task is a requirement to pass this unit.

Details of teaching session dates can be found on the Important Dates calendar. Due dated for assessments will be available in the unit guide and final examination timetables will be released to students prior to Week 5.

Planning for an exam is very important. All students should be familiar with the Exam Rules. In addition, students should refer to the below links for other important examination related information.

- Talk to your lecturer
- Revision tips
- What to bring with you
- What not to bring with you
- Where to get help
- Tips for Success

It is not uncommon for students to have two examinations in one day.

Conduct During Assessments and Examinations

Students must adhere to the Student Code of Conduct and Academic Honesty Policy at all times.

Students will be provided with instructions relating to conduct during in-class assessment tasks. For all examinations, students will be required to:

- provide photographic proof of identity for the duration of the examination. This must be visible at all times during the examination.
- leave mobile phones, electronic devices, bags, computers, notes, books and similar items outside a final examination venue or in a designated space

- ensure any water brought into the examination room is in a clear and unmarked bottle
- obey all instructions provided by an Examination Supervisor
- refrain from communicating in any way with another student once they have entered the examination venue.

Students are NOT permitted:

- into an examination venue once one hour from the time of commencement (excluding any reading time) has elapsed
- to leave an examination venue *before* one hour from the time of commencement (excluding any reading time) has elapsed
- to be readmitted to an examination venue unless they were under approved supervision during the full period of their absence
- to obtain or attempt to obtain assistance in undertaking or completing the examination script
- to receive or attempt to receive assistance in undertaking or completing the examination script.

Students should also ensure they follow all requirements of the Final Examination Policy.

Supplementary Examinations

Supplementary final examinations are held during the scheduled Supplementary Final exam Period. This may fall in Week 7 or within the first week of the subsequent teaching term. Results for supplementary exams may not be available for up to two weeks following the supplementary examination. Students in their final term of study who undertake supplementary final exams should note that formal completion of their Diploma Program will not be possible until supplementary results are released and this may impact on their ability to enrol in subsequent units or programs of study on time.

Retention of Originals

It is the responsibility of the student to retain a copy of any work submitted and produce another copy of all work submitted if requested. Copies should be retained until the end of the grade appeal period each term.

In the event that a student is asked to produce another copy of work submitted and is unable to do so, they may be awarded zero (0) for that particular assessment task.

The University may request and retain the originals of any documentation or evidence submitted to support notifications of disruptions to studies. Requests for original documentation will be sent to the applicant's student email address within six (6) months of notification by the student. Students must retain all original documentation for the duration of this six (6) month period and must supply original documents to the University within ten (10) working days of such a request being made.

Contacting Teaching Staff and Obtaining Help and Feedback

Students may contact teaching staff at any time during the term by using the contact details provided in this guide.

For all university related correspondence, students are required to use their official Macquarie University student email account which may be accessed via the Macquarie University Student Portal. Inquiries from personal email accounts will not be attended to.

Students may seek additional feedback at any time during the term and general feedback about their performance in a unit up to 6 months following results release.

Assessment Tasks

Name	Weighting	Due
4 Hurdle Tests	10%	Fridays in Weeks 1, 2, 4 and 6
Class Test	15%	Practical 4.1
Assignment	15%	Monday Week 6 by 5pm
Final Examination	60%	MUIC Examination Period

4 Hurdle Tests

Due: **Fridays in Weeks 1, 2, 4 and 6**
Weighting: **10%**

The Hurdle Tests are online quizzes that will be made available on iLearn at least one week prior to the due dates (Fridays at midnight in the relevant weeks). Students are allowed an unlimited number of attempts at each test until the deadline. The pass mark is indicated on each hurdle test. Inability to pass a test without help indicates that students should visit the lecturer in their consultation hours. The highest score obtained will count towards the final grade. Each time a student attempts a test a new version of it will be generated. The quizzes are designed to give students an opportunity to practice theoretical, mechanical and interpretational aspects of statistics. Each test is worth 2.5%. Extensions will only be granted for cases in which an application for disruption to studies has been approved.

On successful completion you will be able to:
- Use Excel to manipulate and analyse data.
- Use appropriate techniques to analyse data.
- Draw conclusions from the results of data analysis, write and present a report based on the results of a statistical analysis and apply statistical techniques to problems arising from diverse fields of research.
- Use discipline specific terminology to communicate concepts and ideas relevant to this

unit.

Class Test

Due: **Practical 4.1**

Weighting: **15%**

The Class Test will be held in the first practical class in week 4 (4.1). The class test must be taken in the practical class that a student is registered in. Students must bring their student ID cards. Failure to supply ID will mean exclusion from the test. A standard calculator without text retrieval abilities 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 only be given for students with an approved disruption to studies application.

On successful completion you will be able to:

- Use appropriate techniques to analyse data.
- Draw conclusions from the results of data analysis, write and present a report based on the results of a statistical analysis and apply statistical techniques to problems arising from diverse fields of research.
- Use discipline specific terminology to communicate concepts and ideas relevant to this unit.

Assignment

Due: **Monday Week 6 by 5pm**

Weighting: **15%**

The assignment provides students with an opportunity to develop and to apply sound statistical practice as part of a group. It reinforces the concepts covered in lessons and the skills learned from the practical material. This assignment requires students to use Excel to analyse data using appropriate techniques. The assignment must be submitted in the form of a statistical report. Each group member will take charge of a particular aspect of the report. The assignment will be made available on iLearn at least one week prior to the due date. Submission must be made via the iLearn turnitin link only. Penalties apply for late submissions and failure of a student to contribute to the group report will result in no marks being awarded to that student. Extensions will only be granted for cases in which an application for disruption to studies has been approved.

On successful completion you will be able to:

- Organise and summarise data graphically and numerically.
- Use Excel to manipulate and analyse data.
- Use appropriate techniques to analyse data.
- Draw conclusions from the results of data analysis, write and present a report based on

the results of a statistical analysis and apply statistical techniques to problems arising from diverse fields of research.

- Use discipline specific terminology to communicate concepts and ideas relevant to this unit.

Final Examination

Due: **MUIC Examination Period**
Weighting: **60%**

The Final Examination will be a three hour written exam (plus ten minutes reading time) and will be held during the MUIC Term 3 Final Examination examination period. A page of formulae and relevant Excel output will be included in the final examination. Students will be permitted to take **one A4 sheet (any colour), handwritten on both sides** (using pens and/or pencils) into the final examination. This sheet must be submitted with your final exam paper at the conclusion of the exam. A standard calculator without text retrieval abilities may also be taken into the final examination (mobile phones and other devices with calculator apps are not permitted in the exam). See iLearn for more details on preparing for the final exam.

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 to take exams until the final day of the official examination period.

The only excuse for not sitting an examination at the designated time is because of documented illness or unavoidable disruption. In these special circumstances you may apply for Disruption to Studies. A supplementary examination will only be granted if the student has been found to have had a significant disruption to studies**.**

Note that there is a University policy regarding requests for special consideration for examinations and the granting of supplementary examinations, which can be found at: http://students.mq.edu.au/student_admin/exams/disruption_to_studies/.

Students can submit disruption to studies request(s) through the following link: https://ask.mq.edu.au/

Grading in this Unit

The final Standardised Numerical Grade (SNG) in WSTA150 will be based on students' work during the semester and in the Final Examination. The determination of the final SNG will be based on performance of individual assessment tasks against criteria and standards as detailed in the Grading Policy (see http://mq.edu.au/policy/docs/grading/policy.html). Final grades will be awarded on the basis of students' overall performance and the extent to which they demonstrate fulfillment of the learning outcomes listed for this unit. Students must pass the Final Exam in order to pass the unit.

On successful completion you will be able to:
- Use appropriate techniques to analyse data.

- Draw conclusions from the results of data analysis, write and present a report based on the results of a statistical analysis and apply statistical techniques to problems arising from diverse fields of research.

- Use discipline specific terminology to communicate concepts and ideas relevant to this unit.

Delivery and Resources

DELIVERY & RESOURCES

Scheduled Class Time & Timetables

Weekly face to face contact for this unit will be 8 hours consisting of 2 x 3 hour lessons and 2 x 1 hour computer (48 hours per term).

Students will be able to enrol in their classes and view their personal timetable via eStudent and may also view general timetable information via Macquarie University's Timetable page.

If any scheduled class falls on a public holiday a make-up lesson may be scheduled. Where appropriate, the instructor may instead organise an online make-up lesson or require students to complete additional work outside of class time. Scheduled make-up sessions will be announced via iLearn and attendance may be taken taken .

Attendance Requirements - All students

All students are required to attend at least 80% of scheduled class time to pass this unit.

Attendance will be monitored in each lesson & students will be able to see their attendance records for a unit via iLearn.

Where a student is present for a part of a lesson (for example arrives late, leaves early, leaves the class frequently or for lengthy periods, engages in inappropriate or unrelated activities or does not participate actively in the majority of the lesson) the teacher reserves the right to mark a student absent for that part of the lesson.

Because of the intensive nature of this program, students should be aware that their attendance in this unit may fall below 80% relatively quickly.

In cases of unavoidable non-attendance due to illness or circumstances beyond control, students should lodge a Disruption to Studies Notification via ask.mq.edu.au within 5 working days and supply relevant supporting documentation, even if they have not missed a formal assessment task. This will ensure that that appropriate records of unavoidable absences can be made.

For further information on attendance, please refer to the Attendance and Study Load Policy.

iLearn

iLearn is Macquarie's online learning management system and a principal resource which will be used throughout the term. Students should access iLearn at least 3 times per week as it will contain important information including:

- Announcements - Teaching staff will communicate to the class using iLearn announcements.
- A link to the unit guide for the unit and staff contact details
- Lecture notes and recordings where available
- Learning and teaching activities and resources
- Assessment information
- Tutorial questions and solutions
- Assessment submission tools such as Turnitin
- Other relevant material

For any technical or support issues using iLearn, please contact the IT helpdesk (Ph. 02 9850 4357) or lodge a ticket using OneHelp.

Required and Recommended Texts and/or Materials

- A standard calculator without text retrieval capabilities must be brought to all classes.
- Excel 2013 for Microsoft Windows will be used throughout the course (other versions of Excel should work but ask your tutor or lecturer if there are any problems).

Required Text:

- Business Statistics (Global edition, 3e) by Sharpe, De Veaux and Velleman (ISBN 978-1-292-05869-6) with the MyStatLab key will be used throughout this course and is a required text. This can be purchased in hard copy from the Coop Bookshop or directly from Pearson. The text in e-format with MyStatLab is also available - see iLearn for details.

Many other useful texts are available for additional practice material. A list will be made available on iLearn.

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

Week/ Lesson	Topic	Required Reading from Business Statistics (Global Edition)	Associated Tasks	Assessment Task
1.1	Introduction to Statistics	Chapter 1	Chapter 1 Exercises: 1, 2 and 3	

1.2	Summarising and Displaying Data	Chapter 2 Chapter 3 (3.1 to 3.5)	Chapter 2 Exercises: 2, 4, 8, 10a to 10d and 16 Chapter 3 Exercises: 1a, 3 and 5	Hurdle 1: Due Friday
2.1	Summarising and Displaying Data continued	Chapter 3 (3.7 to 3.10) Chapter 4 (4.1 and 4.2)	Chapter 3 Exercises: 7 (using Excel), 9, 13 and 19 Chapter 3 Exercises: 1, 3, 23 and 25	
2.2	Introduction to Distributions – the Normal Distribution	Chapter 6 (6.4 and the Binomial section of 3.5 only) Chapter 7 (7.1 and 7.2)	Chapter 7 Exercises: 1, 9, 23, 25 and 35	Hurdle 2: Due Friday
3.1	Sampling Distributions and Confidence Intervals for Population Proportions	Chapter 9 (9.1 to 9.3)	Chapter 9 Exercises: 4, 41, 43, 60 and 67	
3.2	Sampling Distributions and Confidence Intervals for Population Means	Chapter 11 (11.1 to 11.6)	Chapter 11 Exercises: 8, 10, 11 and 14 (use 95% confidence)	
4.1	One Sample z-Test for a Population Proportion One Sample z-Test for a Population Mean One Sample t-Test for a Population Mean	Chapter 10 Chapter 11 (11.7)	Chapter 10 Exercises: 12a, 12b, 23, 24 and 41 Chapter 11 Exercises: 18, 23, 40 and 53	
4.2	Hypothesis Test for Comparing Population Means	Chapter 12 (optional) Chapter 13	Chapter 13 Exercises: 13a, 13b, 19, 24, 31, 34 and 47	Class Test held in Practical 4.1 Hurdle 3: Due Friday
5.1	Simple Linear Regression (Part 1)	Chapter 4 (4.5 to 4.8) Chapter 15 (15.1 and 15.2 - omit Hypothesis Test for Correlation)	Chapter 4 Exercises: 10, 31 and 44 Chapter 15 Exercises: 1a, 1b, 6b to 6e	

5.2	Simple Linear Regression (Part 2)	Chapter 4 (4.9 and 4.10)	Chapter 4 Exercises: 1, 13 and 19 Chapter 15 Exercises: 7, 9a, 9b, 16 and 46	
6.1	Chi-squared Goodness-of Fit Test Chi-Squared Test of Independence,	Chapters 14 (14.1, 14.2, 14.3 and 14.6)	Chapter 14 Exercises: 2, 4, 6, 7, 11, 24 and 39	Assignment due Monday
6.2	Review of WSTA150			Hurdle 4: Due Friday

Learning and Teaching Activities

Lessons

Lessons begin in Week 1. Students should attend two x 3-hour lessons each week. Copies of lesson slides will be made available via iLearn. Students should print out these lesson slides and bring printouts to each lesson. Lesson slides will include exercises for students to work through in order to practise and understand the concepts covered. Some group work will be involved in each lesson. The emphasis on group work is for students to work together exploring ideas, devising and asking research questions and planning ways to answer these questions.

Practicals

Practical classes also begin in Week 1. Students will be required to work through practical material that teaches them how to apply the statistical techniques learned during lessons using Excel. Each practical is based on work from the previous lesson topic. 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 the print-outs to practical sessions

Staff consultation (office) hours

Information will be available on iLearn at the end of Week 1.

Numeracy Centre

The Numeracy Centre exists to help students who are experiencing difficulties with numeracy-based subjects such as WSTA150. Any student who lacks the knowledge of mathematics needed for WSTA150 is encouraged to seek the help of the Centre, which is located in C5A 225. The Centre offers a number of services including individual help, supplementary workshops and an opportunity to meet with other students to discuss problems. WSTA150 assumes knowledge of high school mathematics. Anyone without this knowledge should take a mathematics unit prior to enrolling in WSTA150.

Computing Laboratories

Excel will be used in practical sessions and also for completing assignments. Assignments and quizzes can be completed in the computing labs.

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

New Assessment Policy in effect from Session 2 2016 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/

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

Disruption to Studies Policy 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/

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

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 outcome

- Draw conclusions from the results of data analysis, write and present a report based on the results of a statistical analysis and apply statistical techniques to problems arising from diverse fields of research.

Assessment tasks

- 4 Hurdle Tests
- Assignment
- Final Examination

Learning and teaching activities

- Lessons begin in Week 1. Students should attend two x 3-hour lessons each week.

Copies of lesson slides will be made available via iLearn. Students should print out these lesson slides and bring printouts to each lesson. Lesson slides will include exercises for students to work through in order to practise and understand the concepts covered. Some group work will be involved in each lesson. The emphasis on group work is for students to work together exploring ideas, devising and asking research questions and planning ways to answer these questions.

- Practical classes also begin in Week 1. Students will be required to work through practical material that teaches them how to apply the statistical techniques learned during lessons using Excel. Each practical is based on work from the previous lesson topic. 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 the print-outs to practical sessions

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 Excel to manipulate and analyse data.
- Use appropriate techniques to analyse data.
- Draw conclusions from the results of data analysis, write and present a report based on the results of a statistical analysis and apply statistical techniques to problems arising from diverse fields of research.
- Use discipline specific terminology to communicate concepts and ideas relevant to this unit.

Assessment tasks

- 4 Hurdle Tests
- Class Test
- Assignment
- Final Examination

Learning and teaching activities

- Lessons begin in Week 1. Students should attend two x 3-hour lessons each week. Copies of lesson slides will be made available via iLearn. Students should print out these lesson slides and bring printouts to each lesson. Lesson slides will include exercises for students to work through in order to practise and understand the concepts covered. Some group work will be involved in each lesson. The emphasis on group work is for students to work together exploring ideas, devising and asking research questions and planning ways to answer these questions.

- Practical classes also begin in Week 1. Students will be required to work through practical material that teaches them how to apply the statistical techniques learned during lessons using Excel. Each practical is based on work from the previous lesson topic. 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 the print-outs to practical sessions

- Information will be available on iLearn at the end of Week 1.

- The Numeracy Centre exists to help students who are experiencing difficulties with numeracy-based subjects such as WSTA150. Any student who lacks the knowledge of mathematics needed for WSTA150 is encouraged to seek the help of the Centre, which is located in C5A 225. The Centre offers a number of services including individual help, supplementary workshops and an opportunity to meet with other students to discuss problems. WSTA150 assumes knowledge of high school mathematics. Anyone without this knowledge should take a mathematics unit prior to enrolling in WSTA150.

- Excel will be used in practical sessions and also for completing assignments. Assignments and quizzes can be completed in the computing labs.

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 Excel to manipulate and analyse data.
- Use appropriate techniques to analyse data.
- Draw conclusions from the results of data analysis, write and present a report based on

the results of a statistical analysis and apply statistical techniques to problems arising from diverse fields of research.

- Use discipline specific terminology to communicate concepts and ideas relevant to this unit.

Assessment tasks

- 4 Hurdle Tests
- Class Test
- Assignment
- Final Examination

Learning and teaching activities

- Lessons begin in Week 1. Students should attend two x 3-hour lessons each week. Copies of lesson slides will be made available via iLearn. Students should print out these lesson slides and bring printouts to each lesson. Lesson slides will include exercises for students to work through in order to practise and understand the concepts covered. Some group work will be involved in each lesson. The emphasis on group work is for students to work together exploring ideas, devising and asking research questions and planning ways to answer these questions.

- Practical classes also begin in Week 1. Students will be required to work through practical material that teaches them how to apply the statistical techniques learned during lessons using Excel. Each practical is based on work from the previous lesson topic. 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 the print-outs to practical sessions

- Information will be available on iLearn at the end of Week 1.

- The Numeracy Centre exists to help students who are experiencing difficulties with numeracy-based subjects such as WSTA150. Any student who lacks the knowledge of mathematics needed for WSTA150 is encouraged to seek the help of the Centre, which is located in C5A 225. The Centre offers a number of services including individual help, supplementary workshops and an opportunity to meet with other students to discuss problems. WSTA150 assumes knowledge of high school mathematics. Anyone without this knowledge should take a mathematics unit prior to enrolling in WSTA150.

- Excel will be used in practical sessions and also for completing assignments. Assignments and quizzes can be completed in the computing labs.

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 Excel to manipulate and analyse data.
- Use appropriate techniques to analyse data.
- Draw conclusions from the results of data analysis, write and present a report based on the results of a statistical analysis and apply statistical techniques to problems arising from diverse fields of research.
- Use discipline specific terminology to communicate concepts and ideas relevant to this unit.

Assessment tasks

- 4 Hurdle Tests
- Class Test
- Assignment
- Final Examination

Learning and teaching activities

- Lessons begin in Week 1. Students should attend two x 3-hour lessons each week. Copies of lesson slides will be made available via iLearn. Students should print out these lesson slides and bring printouts to each lesson. Lesson slides will include exercises for students to work through in order to practise and understand the concepts covered. Some group work will be involved in each lesson. The emphasis on group work is for students to work together exploring ideas, devising and asking research questions and planning ways to answer these questions.
- Practical classes also begin in Week 1. Students will be required to work through practical material that teaches them how to apply the statistical techniques learned during lessons using Excel. Each practical is based on work from the previous lesson topic. 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 the print-outs to practical sessions

- Information will be available on iLearn at the end of Week 1.
- The Numeracy Centre exists to help students who are experiencing difficulties with numeracy-based subjects such as WSTA150. Any student who lacks the knowledge of mathematics needed for WSTA150 is encouraged to seek the help of the Centre, which is located in C5A 225. The Centre offers a number of services including individual help, supplementary workshops and an opportunity to meet with other students to discuss problems. WSTA150 assumes knowledge of high school mathematics. Anyone without this knowledge should take a mathematics unit prior to enrolling in WSTA150.
- Excel will be used in practical sessions and also for completing assignments. Assignments and quizzes can be completed in the computing labs.

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.
- Use discipline specific terminology to communicate concepts and ideas relevant to this unit.

Assessment tasks

- Assignment
- Final Examination

Learning and teaching activities

- Lessons begin in Week 1. Students should attend two x 3-hour lessons each week. Copies of lesson slides will be made available via iLearn. Students should print out these lesson slides and bring printouts to each lesson. Lesson slides will include exercises for students to work through in order to practise and understand the concepts covered. Some group work will be involved in each lesson. The emphasis on group work is for students to work together exploring ideas, devising and asking research questions and planning ways to answer these questions.
- Information will be available on iLearn at the end of Week 1.

Changes since First Published

Date	Description
30/05/2016	Teacher contact details are updated.
30/05/2016	Class test time is updated.