

School of Economics and Finance
QUAN 102 STATISTICS FOR BUSINESS

Trimester Two 2008

COURSE OUTLINE

- Lecturer:** Cushla Thomson, RH402, phone 463-6855
email: cushla.thomson@vuw.ac.nz
Office hours: Monday, Tuesday 1-2, EA128 (accessed through EA005);
afternoons in RH402 by appointment.
- Administrator:** Francine McGee, RH319, phone 463-5818
email: francine.mcgee@vuw.ac.nz
- Coordinator:** John Randal, RH308, phone 463-5558
email: john.randal@vuw.ac.nz
- Lecture times:** Tues, Weds, Thurs, 9:00-9:50, MCLT103
- Tutorial time:** Sign up online at <https://signups.vuw.ac.nz/>
- Course website:** <http://www.blackboard.vuw.ac.nz/>

The Course Coordinator is John Randal. He has overall responsibility for the course. You should see him if you are having difficulties that you have been unable to resolve by first speaking to your lecturer or tutor (for academic problems), or to the course administrator (for administrative problems).

The Course Administrator will handle the recording of information such as assignment, test and exam marks. All administrative queries concerning assignments or tutorials should be directed to the course administrator via email. You must not send the same email separately to the course coordinator. If QUAN 102 does not appear on your Blackboard home page, please email the course administrator immediately with your SCS username. If you are unsure who to contact, try the course administrator first.

Trimester Dates

Monday 7 July to Saturday 8 November 2008 covers the period from the first lecture to the final examination.

Course Objectives

The course is an introduction to techniques of probability and statistics which are useful in business research or practice. The emphasis is on applications, rather than proofs, but some understanding of the concepts and an ability to communicate the meaning of the results is vital. By the end of the course students should be able to:

- Identify the relevant statistical approach(es) for a wide variety of practical problems.
- Conduct basic statistical analysis as required to address particular questions.
- Communicate the conclusions from an analysis to people who are unfamiliar with statistical terminology.
- Display an awareness of the assumptions on which particular statistical techniques depend and communicate that awareness to non-specialists.

All assessment gives an opportunity to demonstrate these objectives.

Expected workload

You should expect to spend 4 hours in class per week (3 lectures and 1 tutorial) and to spend 7 - 10 hours per week reading, studying and completing assignments.

Assessment Requirements

A 60 minute test covering lectures 1–18 (Tuesday 8 July to Thursday 14 August inclusive) will be held at 6:30pm on Tuesday 2 September. *This will be worth 20% of your final grade.*

The final exam will be scheduled by the university in the trimester two examination period, 17 October – 8 November. *This will be worth the remaining 80% of your final grade.*

Assessment also includes weekly assignments, and a set of Excel exercises, but these do not contribute to your final mark.

Readings

The text is: Clark and Randal (2004), *A First Course in Applied Statistics*, Pearson, ISBN 1877258903 (VUW Library call number QA276 C594 F). This is available from the Victoria Book Centre for \$56.99. Tutorial and assignment problems will be set from this book, and it contains tables which will be essential during the course. Second hand copies may be available.

Complementary books which might provide useful alternative explanations and practice exercises are:

- P. Belgrave and C. Jeffcoat (2004) *Statistics for Business*, Thomson (HF1017 B429 S).
- D.S. Moore and G.P. McCabe (2003) *Introduction to the Practice of Statistics (4th ed.)* W.H. Freeman: New York (QA276.12 M821 I 4ed).
- D.A. Lind, W.G. Marchal and S.A. Wathen (2005) *Statistical Techniques in Business and Economics (12th ed.)* Irwin: Homewood, Illinois (HA29 L742 S 12ed).

The VUW library has a web page that contains detailed information about library resources and has links to other sites. Its URL is <http://www.vuw.ac.nz/library>

Materials and Equipment

You must have a calculator that evaluates powers and has statistical options, including the evaluation of means and standard deviations. Correlation and regression options are useful, but not vital. (The recommended model is a modern Casio fx-82 - older versions of this model did not do regression, RRP approx \$30). Graphics calculators and programmable calculators are permitted, but not necessary. All programmable calculators must be reset prior to the test and exam.

Course content

Date	Lecture	Topic	Text	
8 Jul	1	Introduction; motivation; examples of statistics in use	1	
9 Jul	2	Variables; processing data; stemplots	2	
10 Jul	3	Histograms; barcharts	2	
15 Jul	4	Summary statistics; mean and standard deviation	3	T1
16 Jul	5	Summary statistics for grouped data	3	
17 Jul	6	Percentiles; boxplots	3.4	
22 Jul	7	Scatterplots; correlation	4.1-4.2	T2
23 Jul	8	Regression	4.3	
24 Jul	9	Regression	4.3	A1
29 Jul	10	Introduction to probability	5.1-5.2	T3
30 Jul	11	Probability trees	5.3	
31 Jul	12	Bayes' rule	5.4	A2
5 Aug	13	Probability distributions; binomial experiments	6	T4
6 Aug	14	Binomial applications; proportions	6	
7 Aug	15	Normal distribution	7	A3
12 Aug	16	CLT; application to binomial	7	T5
13 Aug	17	Intro to inference; intervals for a single mean	8.1	Excel 1
14 Aug	18	Testing for a single mean	8.1	A4
<i>Mid-trimester break, 2 weeks</i>				
2 Sep	19	Small sample tests for a mean	8.2	T6
2 Sep		<i>Term test, 60 minutes, 6:30pm</i>		
3 Sep	20	Sign test	8.3	
4 Sep	21	Inference for a proportion	8.4	A5
9 Sep	22	FPCF; margin of error	8.5-8.6	T7
10 Sep	23	Comparing two means, large samples	9.1	
11 Sep	24	Comparing two means, small samples	9.2	A6
16 Sep	25	Comparing two variances	9.3	T8
17 Sep	26	Mann-Whitney	9.4	
18 Sep	27	Paired comparisons	9.5	A7
23 Sep	28	Comparing proportions; 2 populations and FPCF	9.6-9.7	T9
24 Sep	29	One-way chi-square; goodness of fit	11.1	Excel 2
25 Sep	30	Contingency table testing	11.2	A8
30 Sep	31	Regression testing	12.1-12.2	T10
1 Oct	32	Prediction and prediction intervals	12.4	
2 Oct	33	<i>F</i> -tests in a regression context	12.3	A9
7 Oct	34	Wrap-up and revision	13	T11
8 Oct	35	Revision		
9 Oct	36	Revision		A10

Chapter references are to Clark and Randal. You should prepare for each lecture by scanning the indicated text book sections - do not try to read it in detail until *after* the

lecture. (Note: A = Assignment due, T = Tutorial)

Lecture materials will be supported by practice in the weekly tutorials, and through the assignments. Specific tutorial and assignment exercises will be distributed via Blackboard, and will be available prior to the Wednesday lecture each week. You should try the problems in advance of attending the tutorial. The assignment, due the following Wednesday, will allow further practice of these skills.

Tutorials

Weekly tutorials will be held throughout the course, from week 2. They will cover material from the lectures from the previous week. Attendance at weekly tutorials is not compulsory, however, it is recommended that you prepare for the tutorial nonetheless. Tutorial exercises from the textbook will be listed on Blackboard, and these should be attempted before the tutorial you attend. Bring your textbook and calculator.

Assignments

Weekly assignments will be issued by end of Weeks 2–11 on Blackboard. These should be submitted before the following Thursday at 5pm in the appropriately labelled slot in the cabinet outside MY 221 (on the second floor of Murphy). These will assess deeper understanding of the course material than the tutorial preparation exercises will. The assignments will be given one of three marks:

- 0, indicating the assignment is of unacceptable quality
- 1, indicating reasonable understanding/accuracy, but some flaws or omissions
- 2, indicating a perfect or near-perfect assignment.

While a total of 5/20 is *required* for completion of the course, a mark of less than 10/20 would indicate that you may struggle to pass the test and/or final exam. Discussion of assignments with other students is allowed, but submitted work should be your own. Copied work (for all involved parties) is unacceptable and will not only count as having been missed, but may also initiate disciplinary action against the students concerned.

- *DO* head your assignments with
 - ★ your **NAME**,
 - ★ your **TUTOR'S NAME**, and
 - ★ the **TIME** of your tutorial.
- *DO* staple all sheets together.
- *DO NOT* fold your assignments or seal them shut.
- *DO NOT* put your work in a plastic sleeve.

Marked assignments will be returned at the tutorial of the following week. Uncollected assignments will be disposed of at the end of the course.

Penalties

Missed or late assignments will be given a *zero mark*.

Mandatory course requirements

A provisional list of those who have met the mandatory course requirements will be posted on Blackboard by Tuesday 14 October. To be on this list you must:

- receive at least 5 out of 20 for the ten assignments
- satisfactorily complete two sets of Excel exercises. The first is due by Wednesday 13 August, and the second by Wednesday 24 September. These will be distributed and submitted via Blackboard.
- sit the term test

If your performance in the test or assignments is affected by ill health you should take a medical certificate to the course administrator as soon as possible. If you do not meet the mandatory requirements, you may appeal to Dr Randal. For your appeal to have any chance of success, you must present evidence of special circumstances that caused you to fail. If you are denied and sit the final exam, you will still fail the course.

Communication of additional information

Additional information or information on changes will be posted on Blackboard. Some information may be emailed to you via your SCS address, so check this regularly. (This is your University email address.)

Faculty of Commerce and Administration Offices

Railway West Wing (RWW) - FCA Student and Academic Services Office

The Faculty's Student and Academic Services Office is located on the ground and first floors of the Railway West Wing. The ground floor counter is the first point of contact for general enquiries and FCA forms. Student Administration Advisers are available to discuss course status and give further advice about FCA qualifications. To check for opening hours call the Student and Academic Services Office on (04) 463 5376.

Easterfield (EA) - FCA/Education/Law Kelburn Office

The Kelburn Campus Office for the Faculties of Commerce and Administration, Education and Law is situated in the Easterfield Building on the ground floor (EA005). This counter is the first point of contact for:

- Duty tutors for student contact and advice.
- Information concerning administrative and academic matters.
- Forms for FCA Student and Academic Services (e.g. application for academic transcripts, requests for degree audit, COP requests).
- Examinations-related information during the examination period.

To check for opening hours call the Student and Academic Services Office on (04) 463 5376.

Use of Turnitin

Student work provided for assessment in this course may be checked for academic integrity by the electronic search engine <http://www.turnitin.com>. Turnitin is an on-line plagiarism prevention tool which identifies material that may have been copied from other sources including the Internet, books, journals, periodicals or the work of other students. Turnitin is used to assist academic staff in detecting misreferencing, misquotation, and the inclusion of unattributed material, which may be forms of cheating or plagiarism. At the discretion of the Head of School, handwritten work may be copy-typed by the School and subject to checking by Turnitin. You are strongly advised to check with your tutor or the course coordinator if you are uncertain about how to use

and cite material from other sources. Turnitin will retain a copy of submitted materials on behalf of the University for detection of future plagiarism, but access to the full text of submissions will not be made available to any other party.

General University policies and statutes

Students should familiarise themselves with the University's policies and statutes, particularly the Assessment Statute, the Personal Courses of Study Statute, the Statute on Student Conduct and any statutes relating to the particular qualifications being studied; see the Victoria University Calendar or go to <http://www.victoria.ac.nz/home/about/policy/students.aspx>

For information on the following topics, go to the Faculty's website <http://www.victoria.ac.nz/fca> under "Important Information for Students":

- Academic Grievances
- Student and Staff Conduct
- Meeting the Needs of Students with Impairments
- Student Support

Academic Integrity and Plagiarism

Academic integrity is about honesty put simply it means no cheating. All members of the University community are responsible for upholding academic integrity, which means staff and students are expected to behave honestly, fairly and with respect for others at all times.

Plagiarism is a form of cheating which undermines academic integrity. The University defines plagiarism as follows:

The presentation of the work of another person or other persons as if it were one's own, whether intended or not. This includes published or unpublished work, material on the Internet and the work of other students or staff.

It is still plagiarism even if you re-structure the material or present it in your own style or words.

Note: including the work of others will not be considered plagiarism as long as the work is acknowledged by appropriate referencing.

Plagiarism is prohibited at Victoria and is not worth the risk. Any enrolled student found guilty of plagiarism will be subject to disciplinary procedures under the Statute on Student Conduct and may be penalised severely. Consequences of being found guilty of plagiarism can include:

- an oral or written warning
- cancellation of your mark for an assessment or a fail grade for the course
- suspension from the course or the University.

Find out more about plagiarism, and how to avoid it, on the University's website: <http://www.victoria.ac.nz/home/studying/plagiarism.html>