



School of Economics and Finance

QUAN 102 STATISTICS FOR BUSINESS

Trimester 1 2005

COURSE OUTLINE

Contact Details

The Director of all School of Economics and Finance 100-level Programmes is Ms Penelope Proffitt. She will handle the allocation of students to clinic groups and the recording of information such as assignment, test and exam marks. All administrative queries concerning assignments or clinics should be directed to Ms Proffitt. She will be generally available as follows:

M, W, R 8:30am until 10am, and then for a short time after 12 noon - EA129 ph 463 7449

T, F all day and M, W, and R afternoons - RH319 ph 463 5818.

Attendance at lectures is voluntary. You should assess your need to attend by the degree to which you can understand the material in the textbook and by your performance in clinic exercises and assignments. Note that lecturers may occasionally include material additional to that in the textbook. Each lecturer will take both streams for different sections of the course. The lecturers (their room numbers will be announced in the first class) are Moshe Haviv (weeks 1-5) and Cushla Thomson (weeks 6-12).

The Course Coordinator is John Randal, room RH 308, phone 463-5558. 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 clinic supervisor (for academic problems), or to Ms Proffitt (for administrative problems). Dr Randal is also the person to see if you need to make special arrangements because of a disability, or if you want to appeal your test mark or terms result.

Class Times and Room Numbers

CRN 1482: Mon, Wed and Thu 11-11:50 am

KKLT303

CRN 4501: Mon, Wed and Thu 4:10-5pm

KKLT303

Tutorials (sometimes you will see these called clinics) will be held once a week at times and rooms to be announced. You will sign up via Blackboard, instructions on Blackboard. You can find Blackboard at www.blackboard.vuw.ac.nz

The final examination will be held in the period 30 May – 18 June

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:

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

Course Content

The following timetable is only an estimate and is subject to change.

LECTURE SCHEDULE 2005

Lecture date	topics	Text§§	
Week 1:			
1	February 21	Introduction; qualitative and quantitative research; data	1.1-1.4
2	23	Sampling procedures	2.1-2.2
3	24	Survey methods	2.3-2.4
Week 2: Clinic 1			
4	February 28	Tables, charts and graphs	3.1-3.6
5	March 2	Frequency tables and diagrams	4.1-4.4
6	3	Stem and leaf displays; histograms and ogives; distributions	4.5-4.9
Week 3: Clinic 2, Assignment 1			
7	March 7	Measures of location and spread for raw data	5.1-5.3
8	9	Measures of location and spread for grouped data; boxplots	5.5-5.6
9	10	Introduction to probability	6.1-6.7, 7.1-7.2
Week 4: Clinic 3 (First compulsory computer clinic), Assignment 2			
10	March 14	Conditional probability; trees	6.8, 7.3-7.5
11	16	Two-way tables; reversing conditional probabilities	7.6-7.7
12	17	Unrelated events and overlaps	6.9, 7.8-7.9
Week 5: Clinic 4, Assignment 3			
13	March 21	Discrete random variables	8.1-8.3
14	23	Binomial distribution	8.4
15	24	Poisson distribution	8.5
Mid-trimester break			
Week 6: Clinic 5, Assignment 4			
16	April 11	Continuous variables; standard normal distribution	10.1-10.3
17	13	Normal applications	10.4-10.6
18	14	Central Limit Theorem; estimating a mean	10.7, 11.1-11.3
Week 7: Clinic 6 (Second compulsory computer clinic), Assignment 5			
19	April 18	Determining sample size to estimate a mean	11.4
20	20	Estimating a proportion	11.5
21	21	Testing p (small n)	12.1-12.2

Week 8: Clinic 7, Assignment 6

April	25	Public holiday (ANZAC Day)	
22	27	Testing a proportion or mean (large n)	12.3-12.5
23	28	Two-tail tests; quality control	12.6-12.7

Week 9: Clinic 8, Assignment 7

24	May	2	Estimating/testing a mean (small n)	13.1-13.3
25		4	Robustness; testing a median (small n)	13.4-13.5
26		5	Comparing two means or proportions	14.1-14.3

Week 10: Clinic 9, Assignment 8

27	May	9	Paired comparisons; Simpson's Paradox;	14.4-14.5
28		11	Sign test for paired samples	15.1-15.2
29		12	Mann-Whitney test	15.3

Week 11: Clinic 10, Assignment 9

30	May	16	Testing several proportions: one-way chi-square tests	16.1-16.3
31		18	Goodness of fit tests	16.4
32		19	Testing for independence	16.5

Week 12: Clinic 11, Assignment 10

33	May	23	Correlation	17.1-17.3
34		25	Simple regression	17.4-17.5
35		26	Regression applications; forecasting	17.5-17.8

Readings

The text is P. Belgrave & C.E. Jeffcoat *"Statistics in Business"* (Thomson, 2004). All students should obtain a copy of the relevant (to your stream) 2005 QUAN 102 Coursebook from the Student Notes Distribution Centre. This contains the clinic and assignment questions; some recent exam questions and answers will be placed on Blackboard.

Another book you will find extremely useful is

Clark, Megan and Randal, John (2004) *A First Course in Applied Statistics with Applications in Biology, Business and Social Sciences*, ISBN 1877258903.

Students who wish to do additional reading will find a good complementary book, available on three-day loan in the library, is

Moore, David S. and McCabe, George P. (2003) *Introduction to the Practice of Statistics (4th ed.)* W.H. Freeman: New York (VUW Library call number QA276.12 M821 I 4ed).

Further references, also available on three-day loan and/or standard loan, are:

Lapin, L.L. (1993) *Statistics for Modern Business Decisions (6th ed.)* Dryden Press: Fort Worth (HA29 L313 S 6ed).

Mansfield, E. (1994) *Statistics for Business and Economics: Methods and Applications (5th ed.)* Norton: New York (HA29 M287 S 5ed).

Mason, R.D. and Lind, Douglas A. (1990) *Statistical Techniques in Business and Economics (7th ed.)* Irwin: Homewood, Illinois (HA29 M411 S 7ed).

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

Materials and Equipment

You should 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. (A useful model is the Casio fx-82.) Calculators will be permitted in the test and the final exam, provided they are silent in operation and have their own power source.

Assessment Requirements

Your course mark will be a weighted average, made up as follows:

Assignments: 10% Test: 15% Exam: 75%

A 1-hour test covering lectures 1-18 will be held on Thursday April 21 at 6:30pm. The three-hour exam will take place in the exam period (May 30 – June 18). The exam will consist of a mixture of multi-choice and problems, while the test will be all multichoice. Discussion of assignments with other students is encouraged, but submitted work should be your own. Copied work will be given zero marks. We reserve the right to scale final course marks.

(a) Submission of Assignments

There will be 10 weekly assignments, the first of these will be due in week 3. Assignment questions are printed in the QUAN 102 Coursebook. Answer all questions as only a selection of these may be marked. Your answers will be due on Mondays at 10 am. Missed assignments will be given a zero mark.

Place your work in the appropriately labelled slot in the cabinet outside MY 221 on the second floor of Murphy. Your total mark for the first nine assignments will count 10% towards your course mark. Note that some questions will need the use of a computer. Discussion of assignments with other students is allowed, but submitted work should be your own. Copied work (for all involved parties) will not count as having been handed in.

Head your assignments with YOUR NAME, CLINIC GROUP NUMBER and the DAY, TIME and SUPERVISOR of your clinic. SECURE all sheets together and DO NOT FOLD your assignments or seal them shut. Do NOT put your work in a plastic sleeve. Assignments not meeting these conditions, or which are late, may not be marked.

(b) Return of Assignments

Marked assignments will be returned only at the clinic of the following week. Uncollected assignments will be disposed of.

Penalties

Missed assignments will be given a zero mark.

Mandatory Course Requirements (terms).

A provisional terms list will be posted by Friday, May 27. For terms you must:

- (i) submit on time reasonable attempts at least 7 out of the first 9 assignments (any missed assignments out of the ten will still be marked zero), and
- (ii) complete both sets of computer clinic exercises.

Students denied terms 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

terms. If your performance in the test or assignments is affected by ill health you should take a medical certificate to Ms Proffitt as soon as possible. If you are denied terms and sit the final exam, you will still fail the course (with a Q grade).

Communication of Additional Information

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

General University Policies and Statutes

Students should familiarise themselves with the University's policies and statutes, particularly those regarding assessment and course of study requirements, and formal academic grievance procedures.

Student Conduct and Staff Conduct

The Statute on Student Conduct together with the Policy on Staff Conduct ensure that members of the University community are able to work, learn, study and participate in the academic and social aspects of the University's life in an atmosphere of safety and respect. The Statute on Student Conduct contains information on what conduct is prohibited and what steps can be taken if there is a complaint. For queries about complaint procedures under the Statute on Student Conduct, contact the Facilitator and Disputes Advisor. This Statute is available in the Faculty Student Administration Office or on the website at:

www.vuw.ac.nz/policy/StudentConduct.

The policy on Staff Conduct can be found on the VUW website at:

www.vuw.ac.nz/policy/StaffConduct.

Academic Grievances

If you have any academic problems with your course you should talk to the tutor or lecturer concerned or, if you are not satisfied with the result of that meeting, see the Head of School or the Associate Dean (Students) of your Faculty. Class representatives are available to assist you with this process. If, after trying the above channels, you are still unsatisfied, formal grievance procedures can be invoked. These are set out in the Academic Grievances Policy which is published on the VUW website:

www.vuw.ac.nz/policy/AcademicGrievances.

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. Plagiarism is **prohibited** at Victoria.

The University defines plagiarism as follows:

Plagiarism is presenting someone else's work as if it were your own, whether you mean to or not.

'Someone else's work' means anything that is not your own idea, even if it is presented in your own style. It includes material from books, journals or any other printed source, the

work of other students or staff, information from the Internet, software programmes and other electronic material, designs and ideas. It also includes the organization or structuring of any such material.

Plagiarism is not worth the risk.

Any enrolled student found guilty of plagiarism will be subject to disciplinary procedures under the Statute on Student Conduct (www.vuw.ac.nz/policy/studentconduct) and may be penalized severely. Consequences of being found guilty of plagiarism can include:

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

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

Students with Disabilities

The University has a policy of reasonable accommodation of the needs of students with disabilities. The policy aims to give students with disabilities an equal opportunity with all other students to demonstrate their abilities. If you have a disability, impairment or chronic medical condition (temporary, permanent or recurring) that may impact on your ability to participate, learn and/or achieve in lectures and tutorials or in meeting the course requirements, then please contact the Course Coordinator as early in the course as possible. Alternatively you may wish to approach a Student Adviser from Disability Support Services to confidentially discuss your individual needs and the options and support that are available. Disability Support Services are located on Level 1, Robert Stout Building, or phoning 463-6070, email: disability@vuw.ac.nz. The name of your School's Disability Liaison Person can be obtained from the Administrative Assistant or the School Prospectus.

Student Support

Staff at Victoria want students' learning experiences at the University to be positive. If your academic progress is causing you concern, please contact the relevant Course Co-ordinator, or Associate Dean who will either help you directly or put you in contact with someone who can.

The Student Services Group is also available to provide a variety of support and services. Find out more at www.vuw.ac.nz/st_services/ or email student-services@vuw.ac.nz.

VUWSA employs two Education Coordinators who deal with academic problems and provide support, advice and advocacy services, as well as organising class representatives and faculty delegates. The Education Office is located on the ground floor, Student Union Building, phone 463 6983 or 463 6984, email education@vuwsa.org.nz.