

## Course Outline Approval Form

(A separate form must be completed for each course)

Course Outline Approval Forms for the Second Trimester are due at the Faculty's Student & Academic Services Office by Monday 13 July 2009, and should be sent in PDF format to the Administrator, Anthea O'Sullivan: [anthea.osullivan@vuw.ac.nz](mailto:anthea.osullivan@vuw.ac.nz)

Course Code (not CRN) <u>QUAN102</u>	Trimester / Year <u>2009 / 2</u>
Course Title <u>STATISTICS FOR BUSINESS</u>	
Course Coordinator <u>J. RANDAL</u>	Extn <u>5558</u>
Scrutineer <u>MALATHI VELAMURI</u> <i>This person must be a member of Academic Staff</i>	

We confirm that the outline for the above course meets Faculty requirements (as set out in the Course Outline Template), or indicates links to where relevant information is to be found, in respect of the following:

(please tick)

### COURSE ORGANISATION

1. Name of School, course code and title, trimester and year   
*The correct full title of the course, including all parts such as "Special Topic:" must be given. Please ensure that the trimester given in your outline matches that listed in the Banner system.*
2. Staff names & contact details
3. Trimester dates (covering the full assessment period and withdrawal dates)
4. Class times and locations

### LEARNING OBJECTIVES & CONTENT

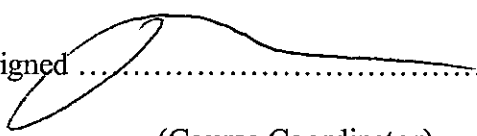
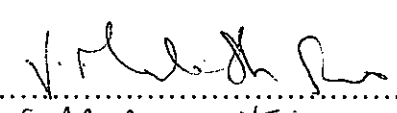
5. Course content
6. Course Learning objectives
7. Course delivery
8. Expected workload
9. Group work (if applicable)
10. Readings, key texts or equivalent materials
11. Any other materials and/or equipment students should obtain

**ASSESSMENT & MANDATORY COURSE REQUIREMENTS**

- 12. A clear statement of all assessment requirements, including:
  - (a) Weighting of each assessment task and corresponding learning objectives
  - (b) Critical dates of each piece of work
  - (c) Word limits for larger written pieces of work
  - (d) Duration of examination including dates of examination period  or N/A
  - (e) Word limits for larger written pieces of work
- 13. Note re: use of assessed work for quality assurance purposes
- 14. Statement on penalties
- 15. Practicum arrangements (if applicable)
- 16. Details of mandatory course requirements
- 17. Statement on the use of Turnitin (if applicable)  or N/A

**LINKS FOR COMMON MATERIAL**

- 18. Academic Integrity
- 19. Details of where to find additional information
- 20. Statement on General University Policies and Statutes
- 21. Manaaki Pihipihinga Programme

<p>Signed .....                    (Course Coordinator)</p> <p>Date ..... 2/7/09 .....</p>	<p>Signed .....                    (MALATHI VELAMURI)                  (Scrutineer)</p> <p>Date ..... 7/7/09 .....</p> <p><i>Note: this person MUST be a member of Academic Staff</i></p>
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School of Economics and Finance  
**QUAN 102 STATISTICS FOR BUSINESS**

Trimester Two 2009

**COURSE OUTLINE**

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**Lecturers:** Adrian Slack, RH315, phone 463-5233 extn 8571  
email: [adrian.slack@vuw.ac.nz](mailto:adrian.slack@vuw.ac.nz) (weeks 1-6, 9am stream)  
Office hours: Availability by appointment on Wednesdays and Thursdays.

Cushla Thomson, RH303, phone 463-6855  
email: [cushla.thomson@vuw.ac.nz](mailto:cushla.thomson@vuw.ac.nz) (weeks 1-6)  
Office hours: EA128, Mon, Tue 11-12 (weeks 1-6), Weds,  
Thurs 10-11 (weeks 7-12);  
other times by appointment.

**Administrator/Course coordinator:**

Francine McGee, RH319, phone 463-5818  
email: [francine.mcgee@vuw.ac.nz](mailto:francine.mcgee@vuw.ac.nz)  
Office hours: 8.00am - 4.30pm, Monday to Friday

John Randal, RH308, phone 463-5558 (course coordinator)  
email: [john.randal@vuw.ac.nz](mailto:john.randal@vuw.ac.nz)

**Duty tutor:** Kate Hill  
EA005, Wed and Thurs 10.00-11.00 (from the 2nd week of trimester)

**Lecture times:** (CRN 5010) Weds, Thurs, 9:00 - 9:50, MCLT103  
(CRN 16016) Weds, Thurs, 11:00 - 11:50, MCLT103

**Tutorial time:** Sign up online at <https://signups.victoria.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. Your email will be passed on to him if necessary.

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**

Teaching Period: Monday 13 July to Friday 16 October 2009

End of Year Study Period: Monday 19 October to Monday 26 October 2009

Examination Period: Tuesday, 27th October to Saturday 14 November 2009 (inclusive)

**Note: Students who enrol in courses with examinations should be able to attend an examination at the University at any time during the formal examination period.**

### **Withdrawal dates:**

Information available via

<https://www.victoria.ac.nz/home/admisenrol/payments/withdrawalsrefunds.aspx>

### **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:

- Process data, using simple graphical techniques.
- Evaluate a range of sample statistics for univariate data, including mean, standard deviation, and percentiles.
- Evaluate and appraise a linear relationship between two variables.
- Use basic rules of probability to solve probability problems with up to 3 conditional events.
- Obtain probabilities from the binomial, and normal distributions.
- State the central limit theorem, and discuss its applicability.
- Implement a range of hypothesis tests, and use these to draw conclusions about population parameters from sample data.
- Form confidence intervals for a range of population parameters, and interpret these intervals.
- Interpret the output of statistical software for advanced hypothesis tests via  $p$ -values.

### **Expected workload**

You should expect to spend 3 hours in class per week (2 lectures and 1 tutorial) and to spend 6 - 8 hours per week reading, studying and completing assignments.

### **Assessment Requirements**

Assignments are worth 10 % of your final grade (see below).

Two 60 minute multichoice tests will be held on : Monday 10 August, 6.30pm (L1-6) and Monday 21 September, 6.30pm (L7-14). *These are worth 20% each of your final grade.*

The final exam will be two hours. This will be scheduled by the university in the second trimester examination period (see below). *This will be worth 50% of your final grade.*

## Examinations

The final examination for this course will be scheduled at some time during the period from Tuesday 27 October to Saturday 14 November 2009 (inclusive).

## 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

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.

Date	Lecture	Topic	Text	Tutorial
15 Jul	1	Variables; processing data	2	
16 Jul	2	Summary statistics	3.1, 3.2	
22 Jul	3	Standard deviation; boxplots	3.2.3, 3.4	L1-2
23 Jul	4	Scatterplots; correlation	4.1-4.2	
29 Jul	5	Regression (estimation and assumptions)	4.3	L3-4
30 Jul	6	Regression (prediction)	4.3	
3 Aug		<i>Assignment 1 due, 5.00pm, content: Lectures 1-4</i>		L5-6
5 Aug	7	Introduction to probability	5.1-5.2	
6 Aug	8	Probability trees	5.3	
10 Aug		<i>Test, 60 minutes, 6.30pm, content: Lectures 1-6</i>		L7-8
12 Aug	9	Bayes' rule	5.4	
13 Aug	10	Distributions; binomial experiments	6	
17 Aug		<i>Assignment 2 due, 5.00pm, content: Lectures 5-8</i>		L9-10
19 Aug	11	Binomial distribution	6	
20 Aug	12	Normal distribution	7	
<i>Mid -trimester break, 22 August – 6 September, 2 weeks</i>				
9 Sep	13	Central limit theorem	7.2	L11-12
10 Sep	14	Sampling distribution	7.3	
14 Sep		<i>Assignment 3 due, 5.00pm, content: Lectures 9-12</i>		L13-14
16 Sep	15	Introduction to inference; intervals for a single mean	8.1	
17 Sep	16	Testing for a single mean	8.1	
21 Sep		<i>Test, 60 minutes, 6.30pm, content: Lectures 7-14</i>		L15-16
23 Sep	17	Small sample testing for a single mean	8.2	
24 Sep	18	Inference for a proportion	8.4	
28 Sep		<i>Assignment 4 due, 5.00pm, content: Lectures 13-16</i>		L17-18
30 Sep	19	Margin of error	8.5-8.6	
1 Oct	20	Comparing two means	9.1-9.2	
7 Oct	21	Paired comparisons	9.5	L19-20
8 Oct	22	Comparing proportions, contingency tables	9.6, 11.2	
12 Oct		<i>Assignment 5 due, 5.00pm, content: Lectures 17-20</i>		
14 Oct	23	Contingency table testing	11.2	L21-22
15 Oct	24	<i>p</i> -value approach to testing	8.1.3	
<i>Examination, see <a href="http://www.victoria.ac.nz/timetables/index.aspx">http://www.victoria.ac.nz/timetables/index.aspx</a></i>				

The following textbook content is not covered in this course: § 2.3.2, 2.3.3, 2.4, 3.3, 4.2.2, 7.4, 8.3, 8.4.3, 8.5, pooled variance, § 9.3, 9.4, 9.7, 10, 11.1, 11.2.2, 12, 13.3, 13.4.

Lecture materials will be supported by practice in the tutorials, and through the assignments. Specific tutorial and assignment exercises will be distributed via Blackboard. You should try the problems in advance of attending the tutorial. The assignment will allow further practice of these skills.

### Tutorials

To view and sign up to tutorials go to <https://signups.victoria.ac.nz/>. You should attend one tutorial per week. Tutorial sign up closes on Friday 17 July at 5.00pm.

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

There will be five short assignments, due fortnightly as indicated above. These are marked out of 3, as follows:

- 0, not submitted, or less than two thirds attempted
- 1, two thirds or more attempted, mostly incorrect
- 2, two thirds or more attempted, mostly correct
- 3, all attempted, all correct.

A mark of less than 5/15 would indicate that you may struggle to pass the test and/or final exam. Assignment feedback will be posted by all tutors on the Blackboard Discussion Forum.

- *DO* head your assignments with
  - \* your **NAME**,
  - \* your **TUTOR'S NAME**, and
  - \* the **TIME and DAY** 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.
- Submit into your tutor's assignment boxes next to (Murphy) MY221.

Marked assignments will be returned at the tutorial of the following week. Uncollected assignments will be disposed of at the end of the course. Missed or late assignments will be given a *zero mark*.

The assignments are *worth 10% of your final grade, determined as follows:*

Assignment total	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Grade contribution	0	2	2	4	4	5	6	7	7	8	8	9	9	10	10	10

## Mandatory course requirements

- sit the two tests

If your performance in the tests 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.

## Withdrawal dates

See <http://www.victoria.ac.nz/home/admisenrol/payments/withdrawalsrefunds.aspx>

## Communication of additional information

Additional information will be conveyed to students via Blackboard. Sometimes you will also be sent emails. These will be sent to the address that you supplied with your enrolment unless you advise otherwise.

**For the following important information follow the links provided:**

## Academic Integrity and Plagiarism

<http://www.victoria.ac.nz/home/study/plagiarism.aspx>

**General University Policies and Statutes**

<http://www.victoria.ac.nz/home/about/policy/academic.aspx>

**Faculty of Commerce and Administration Offices**

<http://www.victoria.ac.nz/fca/studenthelp/Contactus.aspx>

**Manaaki Pihipihinga Programme**

[http://www.victoria.ac.nz/st\\_services/mentoring/](http://www.victoria.ac.nz/st_services/mentoring/)