



UNIVERSITY  
OF TASMANIA

# **SCHOOL OF ECONOMICS AND FINANCE**

**Faculty of Business**

## **BEA681**

# **Statistics for Managers**

**Dr. Kathryn Allen**

**Semester 5**

**November 2007**

## **Unit Outline**

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## Contact Details

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### Postgraduate Course Coordinator

Course coordinator: Dr Rob Hecker  
Campus: Hobart  
Contact (Int) 61 3 6226 1774

### Lecturer

Unit coordinator: Dr Kathryn Allen  
Campus: Hobart  
Email: [allenk@utas.edu.au](mailto:allenk@utas.edu.au)  
Phone: (Int) 61 3 6226 2820  
Fax: (Int) 61 3 6226 7587  
Room Number: Room 413 Commerce Building, Hobart Campus, University of Tasmania

### Unit Details

Unit Title: Statistics for Managers  
Unit Code: BEA681  
School: Economics and Finance  
Faculty: Business  
Campus & Mode: Hobart, Vista Supported  
Unit Weight: 12.5%  
Prerequisite(s): None  
Teaching Staff: Dr. Kathryn Allen

## Unit Description

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Managers need an understanding of statistics for four key reasons: to know how to properly present and describe information; to know how to draw conclusions about large populations based only on information obtained from samples; to know how to obtain reliable forecasts and to know how to improve processes. These four reasons form the basis of the structure and content of Statistics for Managers. While as its name suggests it is essentially a statistics-based unit, the uses of mathematics and arithmetic calculations are kept to a minimum by using the spreadsheet package Microsoft Excel with additional integrated statistical functions using PHStat. The unit aims to stress the interpretation and applications of the various techniques studied. The use of statistical and spreadsheet software has made very sophisticated analyses possible and the unit aims to add a dimension of understanding to the assumptions and limitations underlying these analyses.

### Learning Outcomes

On completion of this unit, students will be able:

- To describe the different sources and categories of data.
- To differentiate between descriptive and inferential statistics.
- To demonstrate understanding of PHStat data analysis software.
- To identify and analyse statistical problems.
- To produce statistical reports for management decision-making.

### Generic Graduate Attributes

This unit adds to the generic attributes of graduates in the following ways:

#### Knowledge

- To acquire knowledge in data analysis strategies and interpretation.
- To be able to carry out and to formulate statistical research pertaining to business management
- To use a wide range of academic skills (i.e. research, analysis, synthesis).
- To demonstrate understanding of PHStat data analysis software.

#### Communication Skills

- To communicate effectively using oral and written mediums and to present well-reasoned arguments in a logical and coherent manner
- To demonstrate numerical and graphical communication skills

#### Problem Solving

- To develop skills in the facilitation of business decisions
- To develop skills in the management of risk and uncertainty in business
- To develop skills in making inferences within the business environment
- To develop the ability to analyse and critically appraise key concepts, arguments and research findings.

#### Social Responsibility

- To acknowledge the social and ethical implications of management research

### Pre-requisites/Co-requisites Units

None, but students would find a basic knowledge of mathematics at high school level and basic working knowledge of MS Excel software helpful. Students without this knowledge should make every effort to obtain appropriate tuition.

## ***Texts, References and Learning Resources***

### **Prescribed Text(s)**

Levine, D.M., Stephan, D., Krehbiel, T.C. and Berenson, M.L. 2008. **Statistics for Managers Using Microsoft Excel** (Fifth edition). Upper Saddle River, NJ: Prentice Hall.

### **Selected Recommended Readings**

McClave, J.T., Benson, P.G. and Sincich, T. 2005. **Statistics for Business and Economics** (9<sup>th</sup> edition). Upper Saddle River, NJ: Prentice Hall.

Bowerman, B. L., O'Connell, R. T. and Hand M. L. 2001. **Business Statistics in Practice** (2<sup>nd</sup> edition). Boston: McGraw-Hill.

Spirer, H. F., Spirer, L., Jaffe, A.J. 1998 **Misused Statistics** (2<sup>nd</sup> ed). New York: Marcel Dekker Inc.

## **E- (electronic) resources**

### **WebCT - Vista**

To access WebCT Vista from your own computer you will need the appropriate software, and hardware to run that software. See **Learning Online** at <http://uconnect.utas.edu.au> for computer software you will need.

**Note:** Older computers may not have the hardware to run some of the required software applications. Contact your local IT support person or the Service Desk on 1818 if you experience difficulties.

See WebCT Vista: Information for Students for further information about accessing WebCT Vista.

## **Teaching Arrangements**

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### **Teaching Sessions**

The unit will be taught over 5 weeks, from November 12 to December 13. Lectures will be held in Commerce Room 204, Level 2, Commerce Building. Lectures will be on the Monday, Tuesday and Thursday of the weeks:

- November 12 - 16
- November 19 - 23
- November 26 - 30
- December 3 - 7

Lectures will be held from 9.30-11.30am on each of these days and will cover the basic material outlined in the schedule below. One hour tutorials/workshops will be held straight after the lectures on Mondays and Tuesdays with the exception of the first Monday on which a lab session will be held. On Thursdays, a lab session will be conducted with the exception of the first Thursday on which on tutorial will be held. There will also be a lab session/tutorial on Monday 10 December in which students can also obtain additional assistance with their assignment.

**These workshops are a compacted style of teaching the conventional weekly lecture/tutorial. It is essential that students complete the required reading and study tasks from the unit outline (and/or accompanying unit materials) before the workshop.** This will enable students to keep up with the study schedule and will be prepared to discuss the material during the workshops.

I will be available for student consultation on Tuesday afternoons from 3pm-5pm in room 413.

## Unit Schedule

The following schedule should be treated as a guide only as it may be subject to minor change. Due to time constraints, only a selected number of the assigned practice questions for each chapter will be discussed in class. Solutions to all questions will be available on WebCT.

### WEEK 1

Lecture/ Workshop	Date/Time	Topic	Reading (Prescribed Text)	Reading (In addition to prescribed text)	Suggested Practice Questions
Day 1 (12 Nov)	9.30-11.30	Introduction and data collection*	Ch 1		1.1, 1.2, 1.5, 7.4, 7.9, 7.10
		Presenting data in tables and charts*	Ch 2		2.4, 2.10, 2.11, 2.15, 2.16, 2.20, 2.22, 2.36, 2.38, 2.31
	11.30-12.30	Numerical descriptive measures	Ch 3		3.2, 3.10, 3.15, 3.18, 3.21, 3.22, 3.24a&b, 3.28, 3.42
	11.30-12.30	Lab session – presenting data in charts and graphs, numerical descriptive measures	Ch's 2-3		

Day 2 (13 Nov)	9.30-11.30	The misuse of statistics		Spirer et al. (1998), Ch 2	
		Basic probability	Ch 4		4.2, 4.4, 4.10, 4.14, 4.18, 4.28
	11.30-12.30	Tutorial – presenting data in charts and graphs, numerical descriptive measures			

Day 3 (15 Nov)	9.30-10.00	Test (topics from days 1 & 2)			
	10-11.30	Discrete probability distributions, the binomial and poisson distributions	Ch 5, p.180- 201		5.2, 5.4, 5.8, 5.14, 5.18, 5.23, 5.24, 5.30, 5.34, 5.38
	11.30-12.30	Tutorial – basic probability			

### WEEK 2

Lecture/ Workshop	Date/Time	Topic	Reading (Prescribed Text)	Reading (In addition to prescribed text)	Suggested Practice Questions
Day 4 (19 Nov)	9.30-11.30	Continuous probability distributions	Ch 6		6.2, 6.4, 6.10. Additional problems available on WebCT.
		Sampling Distributions	Ch 7, 252-279		7.17, 7.19, 7.23, 7.28, 7.30 Additional problems available on WebCT.
	11.30-12.30	Tutorial – discrete probability distributions			

Day 5 (20 Nov)	9.30-11.30	Confidence interval estimation	Ch 8, p. 284 -305, 315-16		8.2, 8.4, 8.8, 8.10, 8.16, 8.20, 8.24, 8.26, 8.42, 8.48
		Hypothesis testing, one sample tests	Ch 9		9.2, 9.4, 9.6, 9.10, 9.16, 9.20, 9.22, 9.29, 9.34, 9.36, 9.44, 9.48, 9.50, 9.56, 9.66, 9.70
	11.30-12.30	Tutorial – continuous probability distributions/ sampling distributions			

Day 6 (22 Nov)	9.30-10.00	Test – topics from days 3 & 4			
	10-11.30	Hypothesis testing, two sample tests for the difference between 2 means	Ch 10, p. 370-390		10.2, 10.4, 10.6, 10.14
	11.30-12.30	Lab session – confidence interval estimation			

## WEEK 3

Lecture/ Workshop	Date/Time	Topic	Reading (Prescribed Text)	Reading (In addition to prescribed text)	Suggested Practice Questions
Day 7 (26 Nov)	9.30-11.30	One way ANOVA	Ch 11, 420-434		11.2, 11.4, 11.8, 11.18
		Chi-square tests	Ch 12, 460-480		12.1, 12.4, 12.6, 12.8, 12.11, 12.14, 12.16, 12.21, 12.24
	2.00-3.00	Tutorial – hypothesis testing			

Day 8 (27 Nov)	9.30-11.30	Simple linear regression	Ch 13, 512-543		13.3, 13.4, 13.5, 13.12, 13.15, 13.16, 13.41, 13.42, 13.49, 13.51. Additional problems available on WebCT.
	11.30-12.30	Tutorial – ANOVA/ Chi-square			

Day 9 (29 Nov)	9.30-10.00	Test – topics from days 5 to 7			
	10.00-11.30	Simple linear regression continued	Ch 13, 512-543		13.3, 13.4, 13.5, 13.12, 13.15, 13.16, 13.41, 13.42, 13.49, 13.51. Additional problems available on WebCT.
	11.30-12.30	Lab session – hypothesis testing, ANOVA/Chi-square			

## WEEK 4

Lecture/ Workshop	Date/Time	Topic	Reading (Prescribed Text)	Reading (In addition to prescribed text)	Suggested Practice Questions
Day 10 (3 Dec)	9.30-11.30	Introduction to multiple linear regression	Ch 14, p. 572-599		14.2, 14.6, 14.10 (a-e only), 14.25, 14.26, 14.32
	11.30-12.30	Tutorial - simple linear regression			

Day 11 (4 Dec)	9.30-11.30	Multiple linear regression continued	Ch 14, p. 572-599 Ch 15, 625-635		
	11.30-12.30	Tutorial – multiple linear regression			

Day 12 (6 Dec)	9.30-10.00	Test – topics from days 8-11			
	10-11.30	Introduction to time series forecasting	Ch 16, p. 652-658, 666-675		16.2, 16.4 (a-d), 16.10, 16.12, 16.14, 16.24, 16.30
	11.30-12.30	Lab session- Simple linear regression			

## WEEK 5

Lecture/ Workshop	Date/Time	Topic	Reading (Prescribed Text)	Reading (In addition to prescribed text)	Suggested Practice Questions
Day 13 (10 Dec)	9.30-11.30	Lab session – Multiple linear regression			
		Assignment assistance			

\* Note that material in these chapters will not be covered in great depth in lectures. Students are expected to be familiar with the concepts covered in these chapters as this material WILL BE TESTED.

## Office Hours

I will be available for consultation on Thursdays 3-5pm. If these times do not suit you, you will need to pre-arrange a time with me in order to avoid disappointment. I will not normally be available at other times. Students may also use the 'Discussions' area on WebCT to post general queries and comments. This area will be checked regularly by me. Students can also email me.

## Assessment

### Assessment Summary

Component	Weight/Value	Due date
Test 1	5%	15 November
Test 2	5%	22 November
Test 3	5%	29 November
Test 4	5%	6 December
Assignment Part I	2%	16 November
Assignment Part II	18%	13 December
Examination	60%	Thursday 20 <sup>th</sup> December 2007 (time to be advised)

### Your Final Mark / How to Pass this Unit

Your final mark for this unit is determined by your internal assessment (40%) and your examination mark (60%). In order to pass this unit your final total mark (i.e., the sum of internal plus final examination) must be 50% or higher. The final mark for the unit may be moderated.

Assessment details

Test 1	
Dates	15 November
Task length	0.5 hour
Content	Topics from days 1-2
Format	Short answer questions
Materials	Pen, paper, non-programmable calculator, text-book
Contribution to Final Mark	5%

Test 2	
Dates	22 November
Task length	0.5 hour
Content	Topics from days 3-5
Format	Short answer questions
Materials	Pen, paper, non-programmable calculator
Contribution to Final Mark	5%

Test 3	
Dates	29 November
Task length	0.5 hour
Content	Topics from days 6 and 7
Format	Short answer questions
Materials	Pen, paper, non-programmable calculator
Contribution to Final Mark	5%

<b>Test 4</b>	
Dates	6 December
Task length	0.5 hour
Content	Topics from days 8-11
Format	Short answer questions
Materials	Pen, paper, non-programmable calculator
Contribution to Final Mark	5%

<b>Major Assignment Part I</b>	
Due Date	16 November 2007
Task Length	No more than 150 words
Content	Brief description of data set and variables to be used in major assignment
Format	Paragraph, submit by email to <a href="mailto:allenk@utas.edu.au">allenk@utas.edu.au</a>
Contribution to Final Mark	2%

<b>Major Assignment Part II</b>	
Due Date	13 December 2007
Task Length	Not exceeding 1500 words (excluding tables/graphs and calculations).
Content	Topics from days 1-11
Format	Analytical report
Contribution to Final Mark	18%

Note: If you require an extension for this assignment then you need to contact your lecturer at least one week before the due date to make other arrangements. You are required to fill in the form, "Approval of an extension for an assignment". This blank form can be found on the Vista site for this unit, or alternatively you can download a copy from the School web page at: [www.utas.edu.au/ecofin/home/teaching.htm](http://www.utas.edu.au/ecofin/home/teaching.htm). Please note that having another assignment due at the same time is NOT a reason for an extension. Extensions will only be permitted under extenuating circumstances.

<b>Examination</b>	
Due Date	December 20
Task Length	3 hours duration preceded by reading time.
Format/Content	It will be a closed -book examination and consist of: 8 compulsory questions
Materials Permitted/Allowed	Pen, pencil and ruler. Non-programmable calculator.
Contribution to Final Mark	60%

## Submission of assignments

All work must have the School of Economics and Finance Assignment Cover Sheet attached. The cover sheet will be available on the unit page on WebCT. Please remember that you are responsible for lodging your written work on or before the due date. We suggest that you keep a copy – photocopying is ideal. Even in the most 'perfect' of systems, items sometimes go astray.

## Requests for extensions

Extensions will only be granted on the basis of consultation with your lecturer well before the due date. If you are ill, please provide a medical certificate so that this can be noted. Work and other commitments will not be considered as reasons for extensions. Students are required to fill out the form "Approval of an extension for an assignment". The blank form can be found on the vista site for this unit or alternatively you can download a copy from the School web page at: [www.utas.edu.au/ecofin/home/teaching.htm](http://www.utas.edu.au/ecofin/home/teaching.htm). Please note that having another assignment due at the same time is NOT a reason for an extension.

If you are unable to attend tests due to circumstances beyond your control, please inform your lecturer well before the test date. You are required to fill out the form "Request to sit a test at an alternative time". The blank form can be found on the vista site for this unit or alternatively you can download a copy from the School web page at: [www.utas.edu.au/ecofin/home/teaching.htm](http://www.utas.edu.au/ecofin/home/teaching.htm)

## Penalties

Late submission of assignments and other forms of assessment will incur a penalty of:

1 business day late	=	10% penalty
2 – 5 business days late	=	25% penalty
More than 5 business days	=	100% penalty

## Academic referencing and Plagiarism

Student writers need to back up their ideas by referring to scholarly literature, works of art and inventions that they have used. Failure to do so constitutes academic dishonesty (plagiarism), a matter considered by the University of Tasmania as a serious offence. It is important that students understand how to correctly refer to the work of others and maintain academic integrity. The appropriate referencing style for this unit is the Harvard system. For further information:

<http://www.utas.edu.au/library/assist/gpoa/gpoa.html>

Please read the following statement on plagiarism. Should you require clarification please see your unit coordinator or lecturer.

## Statement on Plagiarism and Academic Integrity

Plagiarism is a form of cheating. It is taking and using someone else's thoughts, writings or inventions and representing them as your own, for example:

- using an author's words without putting them in quotation marks and citing the source;
- using an author's ideas without proper acknowledgment and citation; or
- copying another student's work.

**If you have any doubts about how to refer to the work of others in your assignments, please consult your lecturer or tutor** for relevant referencing guidelines, and the academic integrity resources on the web at <http://www.utas.edu.au/tl/supporting/academicintegrity/index.html>.

The intentional copying of someone else's work as one's own is a serious offence punishable by penalties that may range from a fine or deduction/cancellation of marks and, in the most serious of cases, to exclusion from a unit, a course or the University. Details of penalties that can be imposed are available in the Ordinance of Student Discipline – Part 3 Academic Misconduct, see <http://www.utas.edu.au/universitycouncil/legislation/ord9.pdf>

**The University reserves the right to submit assignments to plagiarism detection software, and might then retain a copy of the assignment on its database for the purpose of future plagiarism checking.**

## Unit feedback

The University of Tasmania, on a regular basis, evaluates its teaching and learning environment through the Student Evaluation of Teaching and Learning (SETL) system. The University values feedback from students and from time to time you will be asked to complete a SETL evaluation for a unit of study. For more information on SETL go to:

<http://student.admin.utas.edu.au/setl/index.html>

## Mobile Phone Policy

1. Students should normally turn off their mobile phones while in lectures and workshops.
2. In case of special circumstances, such as sick children, student phones may only be left on in class if in "silent mode". Students who leave their phones on should sit near an aisle. If they receive a call they should quietly get up and leave the lecture before taking the call. This provision is meant to cater for special circumstances. Students' answering their mobile phone is disruptive and all these steps are designed to reduce the cost imposed on all.
3. In test situations mobile phones should be kept out of student hands and preferably in the student's bag or backpack – unless prior arrangement has been made with the lecturer.

## Occupational Health and Safety (OH&S)

The University is committed to providing a safe and secure teaching and learning environment. In addition to specific requirements of this unit you should refer to the University's policy at:

[http://www.admin.utas.edu.au/hr/ohs/pol\\_proc/ohs.pdf](http://www.admin.utas.edu.au/hr/ohs/pol_proc/ohs.pdf)

## Learning Expectations and Strategies

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### Expectations

#### University's Expectations of Students

The University is committed to high standards of professional conduct in all activities, and holds its commitment and responsibilities to its students as being of paramount importance. Likewise, it holds expectations about the responsibilities students have as they pursue their studies within the special environment the University offers. The University's Code of Conduct for Teaching and Learning states:

*Students are expected to participate actively and positively in the teaching/learning environment. They must attend classes when and as required, strive to maintain steady progress within the subject or unit framework, comply with workload expectations, and submit required work on time.*

#### Teaching Staff's Expectations of Students

You are expected to:

- Familiarise yourself with this document, the unit outline.
- Familiarise yourself with WebCT-Vista for the electronic delivery of unit material and for various forms of communication.
- To attend all classes. If you must miss a class make sure you read the lecture notes or workshop questions and solutions available on WebCT-Vista. Note that quizzes and tests are often held during class time [see assessment for more details].
- Read and attempt the workshop questions [available on WebCT-Vista] before they are covered and actively participate in workshop sessions.
- To have read the text and attended/read lectures before contacting the teaching staff to explain a concept.
- To check your marked assessment with the solution set [available on WebCT-Vista] to determine your errors.
- To check your UTAS email account regularly for message from teaching staff via WebCT-Vista. It is also wise to check WebCT-Vista regularly for additional material for the unit.
- To check your internal marks once available and contact the teaching staff if there are any errors.

#### Student's Expectations of Teaching Staff

- Students can expect:
- To have all appropriate unit material available electronically via WebCT-Vista on a week by week basis.
- The teaching staff to be available by pre-arranged appointment and in their nominated office hours to raise issues or discuss issues with the material or student performance in the unit.
- That all relevant notices regarding the administration of this unit will be communicated to all students enrolled in the unit via email to your UTAS account.

## Learning Strategies

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If you need assistance in preparing for study please refer to your tutor or lecturer. For additional information refer to the Learning Development website: <http://www.utas.edu.au/learndev/>

If you will be using WebCT for the first time and would like some information on how to use WebCT refer to the following guide: <http://uconnect.utas.edu.au>

Some of the units you will study use video conferencing to deliver lectures and tutorials. To enable you to get the best out of a video conference please refer to the following guide. <http://www.its.utas.edu.au/videoconf/vcstudentguide.pdf>

### Additional Assistance

If you are experiencing difficulties with your studies or assignments, have personal or life planning issues, disability or illness which may affect your course of study, you should raise these with your lecturer.

Student Services staff are located in Hobart, Launceston and Burnie and provide a wide range of services to assist students, they include:

Student Counsellor	Disability Adviser
Careers Adviser	Student Employment Service

Or visit the Student Services website at: <http://student.admin.utas.edu.au/services/>

Should you require assistance in accessing the Library visit their website for more information at <http://www.utas.edu.au/library/>.

International Services website provides information on the assistance available to international students, visit their site at : <http://www.international.utas.edu.au>

The Teaching and Learning website has a wide range of resources on study skills and learning strategies, visit their site at: <http://www.utas.edu.au/tl/students/>. For commencing students I suggest you enrol in the UniStart program.

### Bachelor of Postgraduate Course Coordinator

Course coordinator:	Dr Rob Hecker
Campus:	Hobart
Contact	<a href="mailto:Rob.Hecker@utas.edu.au">Rob.Hecker@utas.edu.au</a>

### Help resolving concerns about this unit

If you have any concerns or complaints with the administration and/or management in this unit or your Postgraduate course of either a general or personal nature, then you might in the first instance discuss the matter with your lecturer. If you feel that you would rather discuss the issue with an independent person within the Faculty of Business, then contact: **Rob Hecker, School of Management, Room 307, Level 3, Commerce Building.**

If the matter is still unresolved and you would like to know who to contact or the procedures for resolving your concern refer to the following website: [http://www.admin.utas.edu.au/ac\\_serv/complaints\\_info.html](http://www.admin.utas.edu.au/ac_serv/complaints_info.html)

The Hobart based Tasmanian University Union (TUU) or the Launceston/Burnie based Student Association (SA) may also be able to assist.