



BEA681
Statistics for Managers

School of Economics and Finance
Faculty of Business

Semester 3, 2007

Unit Outline

Dr Kathy Allen

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Contact Details

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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

Managers need an understanding of statistics for five 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; to understand common misuses of statistics. These five reasons form the basis of the structure and content of *Statistics for Managers*. Although the unit 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 PHStat2. 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.

Generic Graduate Attributes and Learning Outcomes

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

Knowledge

- To develop a detailed understanding of the issues involved in conducting quantitative research in Management
- To acquire knowledge in data analysis and interpretation
- To understand group differences and their implications for business decisions
- To use a wide range of academic skills (research, analysis, synthesis, and so forth)
- To develop the ability to analyse and critically appraise key concepts, arguments and research findings
- To demonstrate understanding of PHStat2 data analysis software
- To learn both independently and cooperatively
- To identify and analyse statistical problems
- To identify common misuses of statistical information
- To apply learning to new and unexpected situations

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 graphic communication skills
- To be able to produce statistical reports as the basis for management decision making

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

Global Perspective

- To demonstrate an awareness of the local and global context of management research

Social Responsibility

- To act ethically, with integrity and social responsibility, in the conduct of management research
- 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. 2005. ***Statistics for Managers Using Microsoft Excel*** (Fourth 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*** (9th edition). Upper Saddle River, NJ: Prentice Hall.

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

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

E- (electronic) resources

WebCT - Vista

This unit is using the new version of WebCT called Vista. For more information about Vista and how to use it see http://www.utas.edu.au/vista/training_and_support.html. The Vista entry page is located at <http://vista.utas.edu.au>. Click 'University of Tasmania' and then 'Log In'. Enter your username and password. Your personal Vista page will appear. It will only contain the units that you are currently enrolled. Click on the 'BEA681' link to gain access to the home page for this unit. There is a Help link in the top right hand corner of each page. If you run into technical problems with Vista, contact the Help Desk via Email: HelpDesk@weboffice.utas.edu.au. If you run into content problems contact the lecturer in the first instance.

Computer hardware & software

For 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://www.utas.edu.au/coursesonline/software.htm> 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

Teaching Sessions

There will be two intensive teaching weeks in January separated by a one week period. The first of these weeks runs from 8th – 11th January and the second week runs from 22nd –25th January. Lectures/workshops will be held from 9.30-12.30am on each of these days and will cover the basic material outlined in the schedule below. The 2-3pm sessions will be lab sessions designed to familiarise students with the PHStat2 software. Please note that this material is examinable.

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.

On the days for which lectures are scheduled there will also be a voluntary half hour tutorial from 12.30pm-1pm each day for students requiring additional assistance with concepts or problems.

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.

Lecture/Workshop	Date/Time	Topic	Reading (Prescribed Text)	Reading (In addition to prescribed text)	Suggested Practice Questions
Day 1 (8 Jan)	9.30 – 11.30	Introduction and data collection	Chapter 1		1.4, 1.9, 1.10,1.11, 1.14 (a to g) and 1.21.
		Presenting data in tables and charts	Chapter 2		2.1, 2.5, 2.8, 2.10 (a to c), 2.12 (a to e, and h to j), 2.18, 2.22, 2.29 (a and b),2.42
	11.30-1.30	Lab session – Excel familiarisation, organisation of numerical data (for those unfamiliar with Excel)			
	2.30-3.30	Lab session – presenting data in charts and graphs	Lab session – presenting data in charts and graphs	Lab session – presenting data in charts and graphs	

Day 2 (9 Jan)	9.30-12.30	The misuse of statistics		Spierer et al. (1998), Chapter 2	
		Numerical descriptive measures	Chapter 3		3.2, 3.8, 3.14 (a to d), 3.18, 3.20, 3.22 (a to f), 3.28 (a and b), 3.42
		Basic probability	Chapter 4		4.2, 4.4 (a to f), 4.8 (a, b, e, and h) 4.12 (a to c), 4.14 (a and b), 4.16 and 4.26
		Discrete probability distributions, the binomial distribution	Chapter 5, p.188-205		5.2, 5.4, 5.8 (a to e), 5.12, 5.14, 5.20
	2.00-3.00	Lab session – numerical descriptive measures, initial data exploration		Lab session handbook	

Lecture/ Workshop	Date/Time	Topic	Reading (Prescribed Text)	Reading (In addition to prescribed text)	Suggested Practice Questions
Day 3 (10 Jan)	9.30-12.30	Continuous probability distributions: the normal distribution	Chapter 6, 224-248		6.2, 6.4, 6.12. Additional problems available on WebCT.
		Sampling Distributions	Chapter 6, 253-269		6.38, 6.40, 6.44, 6.50, and 6.54. Additional problems available on WebCT.
	2.00-3.00	Lab session – for those needing additional assistance to complete exercises from Lab Sessions on previous days		Lab session handbook	
Day 4 (11 Jan)	9.30-12.30	Test 1 (1 hour), topics from days 1-3			
		Confidence interval estimation	Chapter 7, p. 282-305, 315-16		7.2, 7.8 (a,c,e), 7.10, 7.16, 7.22, 7.24, 7.28, 7.32, 7.36, 7.40, 7.48
		Lab session, confidence interval estimation, assignment queries			
	2.00-3.00	Lab session, confidence interval estimation, assignment queries			
WEEK BREAK					
Day 5 (22 Jan)	9.30-12.30	Hypothesis testing, one sample tests	Chapter 8		8.2, 8.4, 8.6, 8.10, 8.16, 8.18, 8.20, 8.27, 8.32, 8.34, 8.42, 8.46, 8.48, 8.52, 8.62, 8.66
		Hypothesis testing, two sample tests for the difference between 2 means	Chapter 9, p. 372-392		9.2, 9.4, 9.6, 9.10, 9.16, 9.18 (extension problems)
	2.00-3.00	Lab session, hypothesis testing		Lab session handbook	
Day 6 (23 Jan)	9.30-12.30	Analysis of variance	Chapter 10, 420-434		10.2, 10.4, 10.8, 10.14. Additional problems available on WebCT.
		Chi-square tests	Chapter 11, 460-480		11.2, 11.4, 11.6 (a & b), 11.12(a), 11.18, 11.20. Additional problems available on WebCT.
	2.00-3.00	Lab session, ANOVA, Chi-square		Lab session handbook	
Day 7 (24 Jan)	9.30-12.30	Simple linear regression	Chapter 12, 512-543		12.2, 12.6, 12.10, 12.13, 12.14, 12.34(a-h), 12.36, 12.37, 12.38, 12.46. Additional problems available on WebCT.
	2.00-3.00	Lab session, simple linear regression		Lab session handbook	
Day 8 (25 Jan)	9.30-12.30	Test (1 hour, topics from days 4-7)			
		Introduction to multiple regression	Chapter 13, p. 576-599		13.2, 13.6, 13.14, 13.22, 13.28
		Introduction to time series forecasting	Chapter 15, p. 652-665		15.2, 15.4 (a, b), 15.10, 15.12
	Information about examination				
2.00-3.00	Lab session, Multiple regression				

Office Hours

During the intensive teaching weeks, I will be available for consultation on Wednesdays 3-5pm. During the week break and the week prior to the exam, I will be available Tuesdays 9.30-12.30am and 2.30-4.30pm. 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	10%	January 11
Test 2	10%	January 25
Assignment	20%	January 29
Examination	60%	Examination Period (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	Due 11 January
Task length	1 hour
Content	Topics from days 1-3
Format	10 multiple choice questions, 2 short answer questions
Materials	Pen, paper, non-programmable calculator, text-book
Contribution to Final Mark	10%

Test 2	
Dates	25 January
Task length	1 hour
Content	Topics from days 4-7
Format	10 multiple choice questions, 2 short answer questions
Materials	Pen, paper, non-programmable calculator
Contribution to Final Mark	10%

Major Assignment	
Due Date	29 January
Task Length	Not exceeding 1500 words (excluding tables/graphs and calculations).
Content	Topics from days 1-8
Format	Analytical and short-answer questions.
Contribution to Final Mark	20%

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

Examination	
Due Date	Examination period – to be advised.
Task Length	3 hours duration preceded by 10 minutes reading time.
Format/Content	It will be a closed -book examination and consist of: <ul style="list-style-type: none"> • A choice of 3 from 4 analytical questions (10 marks each) covering topics in chapters 10, 11, 12, 13 and 15. • 6 compulsory short-answer questions (5 marks each) covering topics in chapters 2, 3, 4, 5, 6, 7 and 8, including material covered in lab sessions.
Materials Permitted/Allowed	<ul style="list-style-type: none"> • 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.

If you are unable to attend quizzes 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

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

Learning Expectations and Strategies

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:

- i) Familiarise yourself with this document, the unit outline.
- ii) Familiarise yourself with WebCT-Vista for the electronic delivery of unit material and for various forms of communication.
- iii) To attend all classes. If you must miss a class make sure you read the lecture notes or WS questions and solutions available on WebCT-Vista. Note that quizzes and tests are often held during class time [see assessment for more details].
- iv) Read and attempt the WS questions [available on WebCT-Vista] before they are covered and actively participate in Workshop sessions (WS).
- v) To have read the text and attended/read lectures before contacting the teaching staff to explain a concept.
- vi) To check your marked assessment with the solution set [available on WebCT-Vista] to determine your errors.
- vii) 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.
- viii) To check your internals marks once available and contact the teaching staff if there are any errors.

Student's Expectations of Teaching Staff

Students can expect:

- i) To have all appropriate unit material available electronically via WebCT-Vista on a week by week basis.
- ii) 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.
- iii) 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

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://www.utas.edu.au/coursesonline/docs/using_webct.pdf

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/>. Your contact Librarian for this unit is: Heather Mitchell (ext 2306)

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.

Help resolving concerns about this unit

If you have any concerns or complaints with the administration and/or management in this unit or your BEc 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 School of Economics, then contact: **Sarah Jennings, School of Economics, Room 413, email sarah.jennings@utas.edu.au**

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

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