Division of Economic and Financial Studies

Stat270: Applied Statistics
ABOUT THIS UNIT

Stat270, Applied Statistics, is a 3 credit point unit run by the Statistics Department in the Division of Economic and Financial Studies.

This unit aims to extend and broaden the statistical experience you have gained in your first 100 level statistics unit. Topics covered will include statistical inference, data handling, one way and two way analysis of variance and simple and multiple regression.

Stat270 is a core unit in the Statistics program. Together with Stat273, Risk and Chance, this unit leads on to 300 level units such as Stat302, Data Mining and Graphics; Stat320, Modelling and Quality Management; Stat328, Market Research and Forecasting; Stat373, Design of Surveys and Experiments; and Stat395, Biostatistics and Epidemiology.

Prerequisites: The prerequisites for this unit are STAT170 (P) or STAT171(P); STAT172 (P) or STAT175(P) or GPA > 1.5. Students are expected to be familiar with the material covered in these prerequisites.

TEACHING STAFF

Convenor: Ms Sue Crowe, C5C480, phone 9850 8560 email: scrowe@efs.mq.edu.au

Please note that any communication with staff via email will only be conducted using your official university email address. Other teaching staff and times for consultation hours will be finalised at the end of Week 1. These will be posted on the web site.

CLASSES
Ott, R. L. (1993) *An Introduction to Statistical Methods and Data Analysis* (Wadsworth)  

**Calculators** An electronic calculator is essential and will be required for the final examination. Only non text returnable calculators are permitted in tests and examinations.

**Computing** You will be expected to use ACCESS for data handling and MINITAB to perform data analyses. We will have some supervised lab sessions during tutorials, and you can use the software in the C5C labs when they are not booked for classes. You can find more information on Minitab at their web site: [http://www.minitab.com/index.htm](http://www.minitab.com/index.htm). This includes a link to e-academy, for short term rental of the software.

**Unit Web Page**


Consult the web page frequently. You will find administrative updates, copies of assessment tasks and solutions and links to other useful sites.
Students in Stat270 will attend 3 x 1 hour lectures and 1 x 1 hour tutorial. A week by week list of the topics to be covered in Stat270 is given at the end of this document.

Lectures: The Course Notes for Stat270, available in the Coop Bookshop, contain copies of the lecture slides. It is recommended that you review the previous week’s lecture material before attending the current week’s classes. The summaries given for each module of the lecture material will give you guidance about the learning objectives for that specific module, as well as suggestions for additional exercises which will reinforce the concepts in that module.

Tutorials: The format of tutorials will vary from week to week. While most tutorials will be held in your designated classroom, in some weeks they will be held in the computing labs in C5C. The main handout for tutorials is given out in the first tutorial. Tutorial material does not have to be prepared in advance, but it is recommended that you review the previous week’s work before attending the current week’s tutorial.

Independent Work: In Stat270 you are also expected to spend some time each week working on your own. This may include revision of lecture and tutorial material, attempts at extra examples (from lectures, your textbook or other text books) and completion of homework tasks and assignments.

At Macquarie University it is expected that the average student would spend approximately 3 - 4 hours per week for each credit point in a unit. This means that for Stat270 you should expect to spend approximately 12 hours per week in both formal classes and independent work.

RELATIONSHIP BETWEEN ASSESSMENT AND LEARNING OUTCOMES

This unit will be assessed as follows:
Assignments There will be two assignments worth 4% each. The weeks in which the assignments are due are given in the unit timetable at the end of this document. While assignments will involve the practical application of the techniques covered in lectures, their main aim is to give you experience at communicating the results of your analysis in a meaningful way. Assignments will generally be handed out two weeks before they are due. Marked assignments will be available for collection at your tutorial 2 weeks after the due date. A model solution will be posted on the web at this time.

Any assignment submitted more than 1 day after the due day and time will not be marked, unless documented evidence of illness or misadventure is provided. Any assignment submitted late, but within 24 hours of the deadline, will be penalised by 2 marks out of 10.

Class Tests There will be two class tests held during lecture time in the weeks specified in the unit timetable. The exact lecture time at which they will be held will be specified in lectures two weeks prior to the test. Students may bring into the tests one A4 sheet, which may have material handwritten on both sides. Information about the content and layout of the tests will be given in lectures.

Class tests should encourage you to consolidate your understanding of the unit material, before moving on to the later modules. They should also give you experience in demonstrating your knowledge, in preparation for the final examination. They will be returned in tutorials the week after you have completed them, and solutions will be available on the web after that.

In cases where a test is missed due to illness or misadventure, no make up test will be given. Your overall assessment mark will be adjusted at the end of the unit.

Class tests and assignments are compulsory, and any student who does not complete these may be excluded from the unit under Bachelor Degree regulation 11(1).
Note that there is a Division policy regarding requests for special consideration for examinations and the granting of supplementary examinations on the website: http://www.efs.mq.edu.au/supexams.htm. Please be aware that you will not be contacted to be advised that you have been granted a supplementary examination - you will need to consult the website for this information.

You are advised that it is Macquarie University policy not to set early examinations for individuals or groups of students. All students are expected to ensure that they are available until the end of the teaching semester, that is the final day of the official examination period.

**PLAGIARISM**

The University defines plagiarism in its rules: "Plagiarism involves using the work of another person and presenting it as one's own." Plagiarism is a serious breach of the University's rules and carries significant penalties. You must read the University's practices and procedures on plagiarism. These can be found in the Handbook of Undergraduate Studies or on the web at: http://www.student.mq.edu.au/plagiarism/

The policies and procedures explain what plagiarism is, how to avoid it, the procedures that will be taken in cases of suspected plagiarism, and the penalties if you are found guilty. Penalties may include a deduction of marks, failure in the unit, and/or referral to the University Discipline Committee.

**UNIVERSITY POLICY ON GRADING**

Academic Senate has a set of guidelines on the distribution of grades across the range from fail to high distinction. Your final result will include one of these grades plus a standardised numerical mark (0 - 100).
Grading in Stat270

Your final grade in Stat270 will be based on your work during semester and in the final examination, as specified in the Assessment section above. The grades allocated are as set out in the Bachelor Degree Rules 10 (2), as follows:

**HD  High Distinction**

denotes performance which meets all unit objectives in such an exceptional way and with such marked excellence that it deserves the highest level of recognition

**D  Distinction**

denotes performance which clearly deserves a very high level of recognition as an excellent achievement in the unit

**CR  Credit**

denotes performance which is substantially better than would normally be expected of competent students in the unit

**P  Pass**

denotes performance which satisfies unit objectives

**PC  Conceded Pass**

denotes performance which meets unit objectives only marginally

**F  Fail**

denotes performance which does not meet unit objectives

Once your grade has been decided, you are given a *Standardised Numerical Grade*, SNG. SNGs are not marks but are a ranking of students based on marks obtained from all facets of the unit assessment.

The SNGs awarded in a particular unit are designed to indicate that the students in each performance band, from HD to PC, have satisfied the criteria for inclusion in that band and ranks them by their performance within that band. Since the ranges of SNGs differ from band to band the relationship between raw marks and SNGs may differ from band to band even within the same unit. The relationship between raw marks and SNGs would almost always differ between units.
Note: this is intended as an *approximate* guide to the timing of the topics in this unit. This timing may vary - check the administrative notes on the web page regularly for updated information. Information about due dates, times, etc. will be listed on the handout for the relevant task.

<table>
<thead>
<tr>
<th>Week (Begins)</th>
<th>Lecture</th>
<th>Work due</th>
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</thead>
<tbody>
<tr>
<td>1 (28 Feb)</td>
<td>Introduction, Module 1.1: Review of Inference, Confidence Intervals Text: 1.2, 1.3, 6.1, 6.2, 7.1, 7.2</td>
<td></td>
</tr>
<tr>
<td>2 (7 Mar)</td>
<td>Module 1.2: Assumptions, Transformations Text: 1.3, 7.1, 7.2, 7.3</td>
<td></td>
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<tr>
<td>3 (14 Mar)</td>
<td>Module 1.3: Type I and II errors, Power Text: 6.4</td>
<td>HW3</td>
</tr>
<tr>
<td>4 (21 Mar)</td>
<td>Module 1.4: Data Handling, Module 2.1: Introduction to One way ANOVA Text: 12.1</td>
<td>HW4</td>
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*** Note: Friday 25 March and Monday 28 March are Public Holidays ***