Subject Information Guide

STATISTICAL CONSULTING: STAT904

Semester 1, 2018

Administration and contact details

Host Department	School. of Mathematics and Applied Statistics
Host Institution	University or Wollongong
Name of lecturer	David Steel
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Subject details

Handbook entry URL	TBA
Subject homepage URL	TBA
Honours student hand-out URL	https://eis.uow.edu.au/smas/current-students/undergraduate/honours/index.html
Start date:	1 March 2018
End date:	31 May 2018
Contact hours per week:	2
Lecture day and time:	Thursday 9.30 to 11.30 (TBC)
Description of electronic access arrangements for students (for example, WebCT)	UOW eLearning Space (Moodle) Email; dsteel@uow.edu.au.

Subject content

1. Subject content description

In this subject we consider the issues associated with the role of statistical consultant and client. Topics include: communication skills, choosing analysis techniques, developing appropriate study designs, questionnaire development and piloting, researching the unknown, sample size, initial interviews, follow-up interviews, analysing data, reporting, and

time and project management.

2. Week-by-week topic overview (subject to change)

Week 1: Aspects of statistical consulting, assessing quantitative research, report writing.
Week 2: Approaching data analysis.
Week 3: Guest lecturer – Dr Marijka Batterham
Week 4: Introduction to Statistical Design.
Week 5: Guest lecturer – TBA
Week 6: Survey design, design of experiments.
Week 7: Handling missing data, randomised controlled trials
Week 8: Guest lecturer – Senior Research Fellow Walt Davis
Week 9: Guest lecturer –TBA
Week 10: Guest lecturer – Distinguished Prof Noel Cressie.
Week 11: Guest lecturer – Dr Ky Mathews
Week 12: Review session
Week 13: Student presentations.

3. Assumed prerequisite knowledge and capabilities

Major in undergraduate statistics, including common statistical methods such as ANOVA, linear and logistic regression, t- tests, chi-squared tests. Ability to use a common statistical analysis package such as SPSS, SAS, STATA or R.

4. Learning outcomes and objectives

After successful completion of this subject, students should be able to perform the following tasks;

(i) Identify and deal with ethical issues arising through the consulting relationship
(ii) Conduct an initial interview as a statistical consultant, eliciting the problem and directing appropriate follow-up.
(iii) Appraise statistical consulting sessions conducted by others.
(iv) Analyse and report to a client in a timely and effective manner.
(v) Research topics previously unknown to them.
(vi) Identify relevant analysis and design approaches in practical situations.

AQF specific Program Learning Outcomes and Learning Outcome Descriptors (if available):

AQF Program Learning Outcomes addressed in this subject	**Associated AQF Learning Outcome Descriptors for this subject**
Efficiently conduct a consulting session with a client	K1,S5,A1
Find information on statistical methodology using the resources of the Library and the World Wide Web	S5, A2
Explain the important principles behind designing and conducting an experiment, sample survey or statistical study	S5, A2
Determine appropriate statistical procedures to use on a wide variety of data sets	S5, A2
Apply and interpret procedures from a statistical package	S5, A2

5. Learning resources

Text/printed notes

Students are not required to purchase reference books. Rather they will be expected to conduct literature reviews to identify current resources and issues in consulting using the Library catalogue and databases. Various notes and background reading materials will be made available to students on the UOW eLearning Space.

Software (local access)

Access to a standard statistical software package such as SPSS, Stata, SAS, or R will be required to undertake some statistical analysis for assignments.

Observations of at least two consulting sessions are required at the home institution. Prof Steel will liaise with the relevant institutions on how this can be achieved.

6. Assessment

The final mark in STAT904 will be determined as follows:*

Weekly Assignments (10)	50%
Consultant observations report	10%
Report and Presentation	15%
Take Home Examination	25%
Total	*100%*

**Attendance at classes may be taken into account*

Weekly Assignments: The ten weekly assignments are each worth 5% giving a total of 50% of the final mark. The week specified in the following table indicates when assignments will be issued and the due dates. It is important that students at least read an assignment before the lecture in the week after it is handed out so that you can ask relevant questions.

Assignment	Week Out	Week Due
1	1	3
2	2	4
3	3	5
4	4	6
5	5	7
6	6	8
7	7	9
8	8	10
9	9	11
10	10	12

Consultant Observations: Each student will also be asked to observe some real consultations and provide a report on them. This assessment must be submitted by 5pm Friday in week 13 (1 Jun) and will count for 10% of the final mark. To be involved in real consulting students will have to make themselves available outside standard class contact times. Any anticipated problem in this regard should be brought to the attention of Prof Steel.

Report and Presentation: Each student will be allocated a topic to research and provide a written report and give a 15-minute presentation at the lecture in week 13 (31 May). This will count for 15% of the final mark.

Take Home Exam (summary of important points): There is a written report identifying and commenting on the important points covered in the subject, including those made by the guest lecturers. This must be submitted by 5pm on 8 June and will count for 25% of the final mark.

Institution Honours program details

Weight of subject in total honours assessment at host department	1/8
Thesis/subject split at host department	BMath, thesis worth 25% BMath(Advanced) thesis worth 37.5%
Honours grade ranges at host department:	
H1	85-100
H2a	75-84
H2b	65-74
H3	50-64