School of Nursing

SNPG916: Applied Analysis in Health Research

Subject Outline
Autumn, 2016
Flexible
Wollongong

Subject Information
Credit Points: 6
Pre-requisite(s): Nil
Co-requisite(s): Nil
Restrictions: Nil
Contact Hours: 3 days workshops and online

Subject Contacts
Subject Coordinator/Lecturer

<table>
<thead>
<tr>
<th>Name:</th>
<th>Prof Ritin Fernandez</th>
</tr>
</thead>
<tbody>
<tr>
<td>Location:</td>
<td>Wollongong, Building 41, Room 124A</td>
</tr>
<tr>
<td>Telephone:</td>
<td>61 2 9113 200</td>
</tr>
<tr>
<td>Email:</td>
<td><a href="mailto:ritin_fernandez@uow.edu.au">ritin_fernandez@uow.edu.au</a></td>
</tr>
<tr>
<td>Consultation mode and times:</td>
<td>Email for appointment</td>
</tr>
</tbody>
</table>

Student Support and Advice
For general enquiries please contact StudentHub 41:

Location: 41.138B
Telephone: 61 2 4221 3492
Email: smah-students@uow.edu.au
Student Consultation and Communication

University staff receive many emails each day. In order to enable them to respond to your emails appropriately and in a timely fashion, students are asked to observe basic requirements of professional communication:

Please ensure that you include your full name and student number and identify your practical class or tutorial group in your email so that staff know who they are communicating with and can follow-up personally where appropriate.

Consider what the communication is about
- Is your question addressed elsewhere (e.g. in the subject outline or, on the eLearning site)?
- Is it something that is better discussed in person or by telephone? This may be the case if your query requires a lengthy response or a dialogue in order to address. If so, see consultation times above and/or schedule an appointment.
- Are you addressing your request to the most appropriate person?

Specific email subject title to enable easy identification of issue
- Identify the subject code of the subject you are enquiring about (as staff may be involved in more than one subject) put this in the email subject heading. Add a brief, specific query reference after the subject code where appropriate.

Professional courtesy
- Address the staff member appropriately by name (and formal title if you do not yet know them).
- Use full words (avoid ‘text-speak’ abbreviations), correct grammar and correct spelling.
- Be respectful and courteous.
- Allow 3 – 4 working days for a response before following up. If the matter is legitimately urgent, you may wish to try telephoning the staff member (and leaving a voicemail message if necessary) or inquiring at the School Office.
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Section A: General Information

Subject Learning Outcomes

On completion of this subject, students should be able to:

1. demonstrate understanding of survey design;
2. demonstrate understanding of the process for creating composite variables and testing reliability and validity;
3. report on and interpret statistical analysis;
4. enter data and use strategies for data cleaning; apply a statistical software package for simple data analysis;

Subject Description

An understanding of statistics is fundamental to health professionals planning to undertake a research degree or to undertake research in practice. While many postgraduate students acquire knowledge of statistical concepts through their undergraduate and postgraduate studies, there remains a knowledge-to-practice gap when they are required to develop survey tools and analyse and present data. This subject aims to develop skills in statistical data analysis, gaining a practical knowledge of: survey tool development and assessment of reliability and validity; data collection using survey methodology; using statistical packages (SPSS); conducting basic statistical tests; interpreting, presenting and reporting results.

eLearning Space

This subject has materials and activities available via eLearning. To access eLearning you must have a UOW user account name and password, and be enrolled in the subject. eLearning is accessed via SOLS (student online services). Log on to SOLS and then click on the eLearning link in the menu column. For information regarding the eLearning spaces please use the following link:
http://uowblogs.com/moodlelab/files/2013/05/Moodle_StudentGuide-1petpo7.pdf

Lecture, Tutorial, Laboratory Times

Dates for study days and weeks will be listed online. Check latest timetabling information on the ‘Current Student’ webpage on UOW website or log into SOLS to view your personal timetable prior to attending classes.


Timetable information can be accessed from

Key University Dates can be accessed from
Readings, References and Materials

Prescribed Textbooks
It is expected that students will purchase the following text.

Manning, M & Munro, D 2007, The survey researcher's SPSS cookbook, Pearson Education Australia, Frenchs Forest.

Prescribed Readings (includes eReadings)
A list of prescribed readings for this subject is available on the eLearning site for this subject. Students are not expected to purchase these. They are available to students through the library on the subject’s eLearning site.

Materials

SPSS Statistical Analysis Software
Access to SPSS software is required for the successful completion of this subject. UOW computer labs are equipped with SPSS. However, to acquire off-campus access, students will need to purchase SPSS Statistics GradPack BASE SPSS version 19 or 20 (the previous versions are acceptable as well). The IBM SPSS Statistics GradPack BASE includes IBM SPSS Statistics Base only, most suitable for basic level statistics courses.

IBM offers SPSS Statistics (previously known as PASW Statistics, or SPSS) software for student home use in the form of the IBM SPSS Statistics GradPack editions, or the SPSS Statistics Student Version. Both are available from campus bookstores (please check availability), online through the Co-Op Bookshop (www.coop-bookshop.com.au), or Student Discounts (www.StudentDiscounts.com.au). A valid student ID is required. Alternatively, it can also be purchased as a 6 or 12-month downloadable package through www.onthehub.com/SPSS/. The Student Version is a limited version of SPSS Statistics Base, constrained to 1500 cases and 50 variables. The SPSS is available for approximately $80-$120 for a 1 Year License to use the software.

If you require technical support with regards to your Student or GradPack version of IBM SPSS, please go to the following link and follow the instructions to log a support case
www.ibm.com/rd/students/
More information on these can be found at:
http://www.spss.com/software/statistics/academic/gradpack/

Recommended Additional Readings
The following references complement the prescribed readings and textbooks:


Recommended readings are not intended as an exhaustive list, students should use the Library catalogue and databases to locate additional resources.

Recent Changes to this Subject
Nil
## Schedule of Learning*

<table>
<thead>
<tr>
<th>Week</th>
<th>Week Commencing</th>
<th>Lecture</th>
<th>Readings</th>
<th>Demonstration/Lab</th>
</tr>
</thead>
</table>
| 1    | 29/02/2016     | Introduction to the subject  
Module 1: Survey design and data entry and cleaning | M&M Ch. 1-3  
Lecture Slides | |
| 2    | 07/03/2016     | Module 1 contd. | Same as above | Friday March 11  
8.30-4.30 |
| 3    | 14/03/2016     | Module 2: Descriptive statistics and psychometrics | M&M Ch. 4-5  
Lecture Slides | |
| 4    | 21/03/2016     | Module 2 contd. | Same as above | |
| 5    | 28/03/2016     | Module 3: Chi-squared and categorical analysis | M&M Ch. 8  
(Sections 8.2 & 8.3) and relevant section/s from Ch. 6 on Assumption Testing  
Lecture Slides | |
| 6    | 04/04/2016     | Module 3 contd. | Same as above | Friday April 8  
8.30-4.30 |
| 7    | 11/04/2016     | Module 4: t-test and Analysis of variance (ANOVA) | M&M Ch. 8  
(Sections 8.6, 8.7, 8.9 & 8.10) and relevant section/s from Ch. 6 on Assumption Testing  
Lecture Slides | |
| 8    | 18/04/2016     | Module 4 contd. | Same as above | |
| 9    | 02/05/2016     | Module 5: Regression analysis | M&M Ch. 8  
(Sections 8.4 & 8.5) and relevant section/s from Ch. 6 on Assumption Testing  
Lecture Slides | |
| 10   | 09/05/2016     | Module 5 contd. | Same as above | Friday May 13  
8.30-4.30 |
| 11   | 16/05/2016     | Module 6: Interpreting results and writing reports | M&M Ch. 7  
Lecture Slides | |
| 12   | 23/05/2016     |         |          | |
| 13   | 30/05/2016     |         |          | |

**Mid-Session Recess 25th April-29th April**

**Study Recess 6th June-10th June**

**UOW Exam Period 11th June-23 June**

*The above timetable should be used as a guide only, as it is subject to change. Students will be advised of any changes as they become known.*
List of Topics Covered
The following are examples of the topics to be covered in this course. This is not an exhaustive list and will be subject to change.

The subject is divided into six (6) modules:

Module 1: Survey design and data entry and cleaning
This module provides you with an understanding of the principles of survey design such as survey tool development, use of different scales of measurement (nominal, ordinal, interval and ratio), data entry into SPSS (a statistical software package used for this subject) and data cleaning.

Module 2: Descriptive statistics and psychometrics
This module provides you with an understanding and examination of the psychometric properties of the variables such as recoding items, testing reliability (e.g., Cronbach’s alpha) and validity (e.g., inter-item correlations) of the variables, creating composite scores of the variables (i.e. scale scores computed from item-level data). In addition, it provides information on how to examine and interpret descriptive statistics (e.g. frequencies, means and standard deviations).

Module 3: Chi-squared and categorical analysis
This module covers statistical analyses conducive for examining categorical (nominal and ordinal) data. Examples of tests that will be covered are chi-squared test (used to examine relationship between two variables measured on nominal scales) and Spearman’s rank order correlation and Kendall’s tau (used to examine relationship between two variables, if one or both are on ordinal scales). In addition, it provides information on how to interpret the results.

Module 4: t-test and Analysis of variance (ANOVA)
This module provides understanding of statistical techniques used to examine group differences in the variables (known as dependent variables). t-tests are used to examine differences between 2 groups only. On the other hand, ANOVA (an extension of t-test) can be used to examine differences between 2 or more groups. In addition, it covers different types of t-tests and ANOVAs, underlying assumptions for each of the statistical test, non-parametric equivalents of these tests, and interpretation of results.

Module 5: Regression analysis
This module provides an understanding of linear regression analysis, including multiple linear regression (MLR) analysis. It covers different types of MLR analyses (standard, hierarchical, and step-wise), underlying test assumptions, and interpretation of results.

Module 6: Writing and interpreting reports
This module provides training in interpreting and writing results correctly and subsequently a coherent research report as required at a postgraduate level and beyond.

A Timetable of Topics will be available from the eLearning site in week 1 of session.
Section B: Assessment

Assessment Summary

<table>
<thead>
<tr>
<th>Assessment Item</th>
<th>Form of Assessment</th>
<th>Due Date</th>
<th>Return/Feedback Due Dates</th>
<th>Weighting</th>
</tr>
</thead>
<tbody>
<tr>
<td>Assessment 1</td>
<td>Assignment</td>
<td>Due date Week 4 (24th March), Week 5 (31st March), Week 6 (7th April), &amp; Week 7 (14th April)</td>
<td>Within 21 days from due date</td>
<td>20%</td>
</tr>
<tr>
<td>Assessment 2</td>
<td>Lab Workbook</td>
<td>2nd May 2016</td>
<td>Within 21 days of due date</td>
<td>40%</td>
</tr>
<tr>
<td>Assessment 3</td>
<td>Research Report</td>
<td>6th June 2016</td>
<td>Release of results</td>
<td>40%</td>
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</tbody>
</table>

Total Marks 100%

Details of Assessment Tasks
Specific details about each assessment and the explicit marking criteria used to assess them will be available in the eLearning space for this subject by the first day of session.

Assessment 1 Assignment

Due date Week 4, (24th March), Week 5, (31st March), Week 6, (7th April), & Week 7, (14th April)

Weighting 20%

Submission Submit an electronic copy of your assignment via upload to eLearning. Please refer to detailed information regarding submission of assignments on the subject’s eLearning site.

Type of Collaboration Individual Assessment

Length 200 words each

Details This assessment will evaluate your ability to correctly identify, as well as interpret and/or provide comments on, examples of survey design and data analysis.

Subject Learning Outcomes 2

Marking Criteria The marking criteria for this assessment task are available in eLearning

Assessment 2 Lab Book Worked Examples

Due date Monday 2nd May

Weighting 40%

Submission Submit an electronic copy of your assignment via upload to eLearning. Please refer to detailed information regarding submission of assignments on the subject’s eLearning site.

Type of Collaboration Individual Assessment

Details Students are required to hand-in their completed lab books with worked examples of data analyses, using SPSS statistical software, covered in the workshops.

Subject Learning Outcomes 1, 4

Marking Criteria The marking criteria for this assessment task are available in eLearning
Assessment 3 | Research Report
---|---
**Due date** | Monday 6th June
**Weighting** | 40%
**Submission** | Submit an electronic copy of your assignment via upload to eLearning. Please refer to detailed information regarding submission of assignments on the subject’s eLearning site.
**Type of Collaboration** | Individual Assessment
**Length** | 2500 words
**Details** | This assessment task will evaluate your ability to conduct statistical analyses to answer given research question/s and write a research report on the analysis including a brief Introduction, detailed Results section and short Discussion on the findings.
**Style and format** | Report
**Subject Learning Outcomes** | 1, 3
**Marking Criteria** | The marking criteria for this assessment task are available in eLearning

**Minimum Requirements for a Pass in this Subject**
To receive a clear pass in this subject a total mark of 50% or more must be achieved. In addition, failure to meet any of the minimum performance requirements is grounds for awarding a Technical Fail (TF) in the subject, even where total marks accumulated are greater than 50%.

The minimum performance requirements for this subject are:
- attempt all assessment tasks

**Minimum Student Attendance and Participation:**
It is expected that students will allocate 12 hours per week to this subject, including any required class attendance, completion of prescribed readings and assessment tasks.

Student attendance at tutorials, practicals, seminars and/or simulations is not compulsory but is strongly recommended.

**Scaling:**
Scaling will not occur in this subject.

**Late Submission:**
Late submission of an assessment task without an approved extension of the deadline is not acceptable. If you are unable to submit an assessment due to extenuating circumstances (e.g. medical grounds or compassionate grounds), you can make an application of academic consideration. Not all circumstances qualify for academic consideration. For further details about applying for academic consideration visit the Student Central webpage: [http://www.uow.edu.au/student/central/academicconsideration/index.html](http://www.uow.edu.au/student/central/academicconsideration/index.html)

**Late Submission Penalty:**
Marks will be deducted for late submission at the rate of 5% of the total possible marks for that particular assessment task per day. This means that if a piece of work is marked out of 100, then the late penalty will be 5 marks per day (5% of 100 possible marks per day). The formula for calculating the late penalty is: the total possible marks x 0.05 x number of days late. For the purposes of this policy a weekend (Saturday and Sunday) will be regarded as two days.

For example:
- Student A submits an assignment which is marked out of 100. The assignment is submitted 7 days late. This means that a late penalty of 35 marks will apply (100 x 0.05 x 7). The assignment is marked as per normal out of 100 and is given a mark of 85/100, and then the
late penalty is applied. The result is that the student receives a final mark of 50/100 for the assignment (85 (original mark) – 35 marks (late penalty) = 50/100 (final mark)).

- Student B submits a report which is marked out of 20. The report is submitted three days late. This means that a late penalty of 3 marks will apply ((20 x 0.05 x 3). The report is marked as per normal out of 20 and is given a mark of 17/20, and then the late penalty is applied. The result is that the student receives a final mark of 14/20 for the report (17 (original mark) – 3 marks (late penalty) = 14/20 (final mark)).

No marks will be awarded for work submitted either after the assessment has been returned to the students or more than two weeks after the due date, whichever is the sooner. This does not apply to situations where a particular assessment task is undertaken by students at different times throughout the session, but where the assessment is based on experiments or case studies specific to a student. In this case no marks will be awarded for work submitted more than two weeks after the due date.

Notwithstanding this, students must complete all assessment tasks to a satisfactory standard and submit them, regardless of lateness or loss of marks, where submission is a condition of satisfactorily completing the subject.

**System of Referencing Used for Written Work**

The Author-Date (Harvard) referencing system should, unless otherwise specified for a particular assignment (check Details of Assessment Tasks), be utilised. A summary of the Harvard system can be accessed on the Library website at: [http://public01.library.uow.edu.au/refcite/style-guides/html/](http://public01.library.uow.edu.au/refcite/style-guides/html/)

**Use of Internet Sources**

Students are able to use the Internet to access the most current information on relevant topics and information. Internet sources should only be used after careful critical analysis of the currency of the information, the role and standing of the sponsoring institution, reputation and credentials of the author, the clarity of the information and the extent to which the information can be supported or ratified by other authoritative sources.

**Plagiarism**

The full policy on Academic Integrity and Plagiarism is found in the Policy Directory on the UOW website.

"The University's Academic Integrity and Plagiarism Policy, Faculty Handbooks and subject guides clearly set out the University's expectation that students submit only their own original work for assessment and avoid plagiarising the work of others or cheating. Re-using any of your own work (either in part or in full) which you have submitted previously for assessment is not permitted without appropriate acknowledgement. Plagiarism can be detected and has led to students being expelled from the University.

The use by students of any website that provides access to essays or other assessment items (sometimes marketed as ‘resources’), is extremely unwise. Students who provide an assessment item (or provide access to an assessment item) to others, either directly or indirectly (for example by uploading an assessment item to a website) are considered by the university to be intentionally or recklessly helping other students to cheat. This is considered academic misconduct and students place themselves at risk of being expelled from the University."
Submission of Assignments
Assignments are to be submitted via drop box in the eLearning site.

Refer to the submission requirements under the details of the individual assessments. Students should ensure that they receive a receipt acknowledging submission. Students will be required to produce this in the event that an assessment task is considered to be lost. Students are also expected to keep a copy of all their submitted assignments in the event that re-submission is required.

Assessment Return
Once your assignment has been marked and your Subject Coordinator releases results for the assessment you will be able to access feedback on your assignment within the assessment submission page on the Moodle site for this subject. This will include feedback within the marking guide, feedback comments and feedback files (where applicable) that provide you with your markers feedback on your written work. You will receive an automated notification that your assignment results are available for download / review within Moodle.

You can access feedback on your marked assignment on the Assignment submission page, when marks and feedback have been released to students, please note that the Feedback section appears at the bottom of the page.

Your final mark in the assessment task will be posted within SOLS.
Section C: General Advice

Students should refer to the Faculty of Science, Medicine and Health website for information on policies, learning and support services and other general advice.

University Policies

Students should be familiar with the following University policies:

a. Code of Practice – Teaching and Assessment

b. Code of Practice – Research, where relevant

c. Code of Practice – Honours, where relevant

d. Student Charter

e. Code of Practice – Student Professional Experience, where relevant

f. Academic Integrity and Plagiarism Policy

g. Student Academic Consideration Policy

h. Course Progress Policy

i. Graduate Qualities Policy

j. Academic Complaints Policy (Coursework and Honours Students)

k. Policy and Guidelines on Non-Discriminatory Language Practice and Presentation

l. Workplace Health and Safety, where relevant

m. Children in the Workplace and Study Environment Policy

n. Intellectual Property Policy

o. IP Student Assignment of Intellectual Property Policy, where relevant

p. Policy on Ethical Objection by Students to the Use of Animal and Animal Products in Coursework Subjects, where relevant

q. Human Research Ethics Guidelines, where relevant
r. Animal Research Guidelines, where relevant

s. Student Conduct Rules and accompanying Procedures or Research Misconduct Policy for research students

**Student Support Services and Facilities**

Students can access information on student support services and facilities at the following link. This includes information on “Academic Support”, “Starting at University”, “Help at University” as well as information and support on “Career’s and Jobs”. [http://www.uow.edu.au/student/services/index.html](http://www.uow.edu.au/student/services/index.html)

**Student Etiquette**


**Version Control Table**

<table>
<thead>
<tr>
<th>Version Control</th>
<th>Release Date</th>
<th>Author/Reviewer</th>
<th>Approved By</th>
<th>Amendment</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>20151118</td>
<td>Prof Ritin Fernandez – Subject Coordinator</td>
<td>Mrs Sonia Losinno – ADE nominee</td>
<td>Final SNPG916 Autumn 2016 Subject Outline</td>
</tr>
</tbody>
</table>