STAT3005/7007/8020
Advance Marketing Research Methods
Multivariate Analysis
Semester 1, 2014

This course is directed at students interested in quantitative methods of marketing research. The aim of this course is to explore multivariate techniques used in modern marketing practice.

Emphasis will be placed on case studies of marketing practice and on the practical application of the methods discussed. Topics to be drawn from: analysis of variance; regression analysis; principal components analysis; discriminant analysis; canonical correlation analysis; factor analysis; cluster analysis; multi-dimensional scaling; conjoint analysis.

<table>
<thead>
<tr>
<th>Mode of Delivery</th>
<th>On campus</th>
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<tbody>
<tr>
<td>Prerequisites</td>
<td>STAT2008 or STAT6038</td>
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<tr>
<td>Incompatible Courses</td>
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<td>Course</td>
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<tr>
<td>Convenor/Lecturer</td>
<td>Mr Abhinav B Mehta</td>
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<tr>
<td>Phone</td>
<td>02 6125 1081</td>
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Students with enquiries about program (degree) requirements should contact the College office; enquiries about course administration (subjects) are normally handled by the relevant Research School.
**COURSE OVERVIEW**

**Learning Outcomes**
On satisfying the the requirements for this course, students should have the knowledge and skills to:

1. Understand the use of multivariate statistical techniques in modern marketing practice
2. Appreciate the application of these techniques in marketing research
3. A more detailed understanding of the statistical techniques and how they might be applied in other areas of research (not just marketing research) (only for STAT8020 students)

**Proposed Assessment (Summary):** Assessment for this course will be confirmed after consultation with students at the first lecture of the semester. If there are any changes to the assessment, those changes will be publicised on Wattle.

<table>
<thead>
<tr>
<th>Assessment Task</th>
<th>Value</th>
<th>Due Date</th>
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<tbody>
<tr>
<td>1. Assignment 1</td>
<td>20%</td>
<td>In Week 7</td>
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<tr>
<td>2. Assignment 2</td>
<td>20%</td>
<td>In Week 12</td>
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<td>3. Final Examination</td>
<td>60%</td>
<td>Examination Period</td>
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**Feedback**

**Staff Feedback**
Students will be given feedback in the following forms in this course:

- News Forum on wattle will be used to make announcements.
- Important announcements may also be made during lectures and they will later be put up on wattle.
- Feedback regarding your assignment will be put up on wattle along with your marked assignment.
Student Feedback

ANU is committed to the demonstration of educational excellence and regularly seeks feedback from students. One of the key formal ways students have to provide feedback is through Student Experience of Learning Support (SELS) surveys. The feedback given in these surveys is anonymous and provides the Colleges, University Education Committee and Academic Board with opportunities to recognise excellent teaching, and opportunities for improvement.

For more information on student surveys at ANU and reports on the feedback provided on ANU courses, go to:
http://unistats.anu.edu.au/surveys/selt/students/ and
http://unistats.anu.edu.au/surveys/selt/results/learning/

Policies

ANU has educational policies, procedures and guidelines, which are designed to ensure that staff and students are aware of the University’s academic standards, and implement them. You can find the University’s education policies and an explanatory glossary at: http://policies.anu.edu.au/

Students are expected to have read the Code of Practice for Student Academic Integrity before the commencement of their course.

Key policies include:

- Student Assessment (Coursework)
- Student Surveys and Evaluations
- Assessment of Student Learning

COURSE SCHEDULE

<table>
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<tr>
<th>Week/Session</th>
<th>Summary of Activities</th>
<th>Assessment</th>
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<tr>
<td>1</td>
<td>Statistics Revision</td>
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<tr>
<td>2</td>
<td>Statistics Revision</td>
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<td>3</td>
<td>Exploratory Factor Analysis</td>
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<td>4</td>
<td>Cluster Analysis</td>
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<td>5</td>
<td>Regression</td>
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<td>6</td>
<td>Correlation</td>
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<td>7</td>
<td>ANOVA</td>
<td>Assignment 1</td>
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<tr>
<td>8</td>
<td>ANOVA</td>
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<td>9</td>
<td>Conjoint Analysis</td>
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<td>10</td>
<td>Discriminant Analysis</td>
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<tr>
<td>11</td>
<td>Logistic Regression &amp; SEM</td>
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<tr>
<td>12</td>
<td>SEM</td>
<td>Assignment 2</td>
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<tr>
<td>13</td>
<td>Revision</td>
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<td></td>
<td>Examination period</td>
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ASSESSMENT REQUIREMENTS

Assessment Tasks

Assessment Task 1: Assignment 1

Details of task: There will be two assignments, corresponding to the two main areas of the course on a realistic example of survey data. The assignments will be designed to provide practical experience in the application of multivariate statistical methods to data typically collected in marketing research, which is important in achieving learning outcome (ii) above

Assessment Rubrics
Word limit (where applicable): 10 pages limit
Value: 20%

Assessment Task 2: Assignment 2

Details of task: There will be two assignments, corresponding to the two main areas of the course on a realistic example of survey data. The assignments will be designed to provide practical experience in the application of multivariate statistical methods to data typically collected in marketing research, which is important in achieving learning outcome (ii) above

Assessment Rubrics
Word limit (where applicable): 10 pages limit
Value: 20%

Examination(s)
A three hour exam (with 15 minutes reading time) will be held during the exam period. The examination will cover the entire course content for each of the three courses, and will be particularly relevant to learning outcome (i) above. As in previous final examinations (which will be made available on Wattle), the exam will present examples of the results of multivariate statistical analyses and ask you a series of questions to test your understanding and interpretation of these results. Learning outcome (iii) above may be assessed using either additional assignment work or different questions for STAT8020 students in the final exam.

Assignment submission
Online Submission: Assignments are submitted using the course Wattle site. Submitted assignments must include the cover sheet provided on Wattle. Please keep a copy of the assignment for your records.

Extensions and penalties
Extensions will not be granted in most situations. If you have a genuine medical condition which prevents you from submitting the assignment then please get in touch with the lecturer well before the submission date.

Returning assignments
The assignments will be returned via wattle with all feedback.
Resubmission of assignments
No resubmissions allowed.

Examination material or equipment
You will be notified closer to the examination period.

Scaling
Your final mark for the course will be based on the raw marks allocated for each of your assessment items. However, your final mark may not be the same number as produced by that formula, as marks may be scaled. Any scaling applied will preserve the rank order of raw marks (i.e. if your raw mark exceeds that of another student, then your scaled mark will exceed the scaled mark of that student), and may be either up or down.

Tutorial and/or Seminar signup
Enrolment in tutorials will be completed online using the CBE Electronic Teaching Assistant (ETA). To enrol, follow these instructions:

1. Go to http://eta.fec.anu.edu.au
2. You will see the Student Login page. To log into the system, enter your University ID (your student number) and password (your ISIS password) in the appropriate fields and hit the Login button.
3. Read any news items or announcements.
4. Select "Sign Up!" from the left-hand navigation bar.
5. Select your courses from the list. To select multiple courses, hold down the control key. On PCs, this is the Ctrl key; on Macs, it is the key. Hold this key down while selecting courses with the mouse. Once courses are selected, hit the SUBMIT button.
6. A confirmation of class enrolments will be displayed. In addition, an email confirmation of class enrolments will be sent to your student account.
7. For security purposes, please ensure that you click the LOGOUT link on the confirmation page, or close the browser window when you have finished your selections.
8. If you experience any difficulties, please contact the School Office (see page 1 for contact details).
9. Students will have until the end of week 2 to finalise their enrolment in tutorials. After this time, students will be unable to change their tutorial enrolment.

Workloads
Students taking this course are expected to commit at least 10 hours a week to completing the work.
This will include:

- lectures
- tutorials
Prescribed Texts and Reference Materials

Information about prescribed texts should match the information on the study@ site for the course.

The recommended and required textbook for this course is:


Access to the current edition or a recent older edition of this text is highly recommended for this course and it is available for purchase from the Co-op Bookshop.

I have also requested that copies of the two texts recommended in earlier years be placed on short loan in the ANU library, as they are still useful reading for this course.

Marketing students may already have a copy of the following text which is recommended for courses such as STAT2003, STAT6006, MKTG2001 and MKTG7058. Copies of various editions of this text are available in the Chifley Library (call no. HF5414.M35559):


An additional text, previously recommended for STAT8020 students, is available in the Hancock Library (call no. QA278.G73):


Both of these texts are also available for purchase from the Co-op Bookshop, but I do NOT recommend purchasing either of them just for the sake of this course; although the Lattin text would a useful addition to the bookshelf of any applied statistician.

Technology & Software

The application of modern statistical techniques requires familiarity with one or more statistical computing packages. In this course we will use the SPSS statistical computing package, a recent version of which is available on all InfoCommons computers on the ANU campus, including those in the Windows PC computer labs. SPSS will be used in computing workshops and to do the work for your assignments, but programming in SPSS will NOT be required.

There are a number of introductory texts for students who wish to broaden their knowledge of SPSS; a good example by two Australian authors is:

If you purchase one of the above texts from the Co-op Bookshop, many of them come packaged (for a small additional price) with the student version of SPSS. This is typically the version prior to the current release, with some restrictions on the size of the data sets that can be analysed. A student version of SPSS or any recent version of the software should be sufficient to perform the analysis required for the assignments in this course, though you may have problems with the student version if you chose to do an analysis project on a larger and more complex data set.

Students may also find it useful to have access to a pocket calculator for tutorial and assignment work and especially for the final exam.

**Support for Students**
The University offers a number of support services for students. Information on these is available online from [http://students.anu.edu.au/studentlife/](http://students.anu.edu.au/studentlife/).