Unit Outline*

MGMT8504
Data Analysis and Decision Making

MBA
Trimester 2, 2011
Crawley

Mr Peter Carter

Business School
www.business.uwa.edu.au

* This Unit Outline should be read in conjunction with the Business School Unit Outline Supplement available on the Current Students website http://www.business.uwa.edu.au/students
UNIT DESCRIPTION

Introduction

Welcome to Trimester 2, 2011, and specifically MGMT8504 Data Analysis and Decision Making, hereafter called DADM. Some of you may have studied statistics recently as part of your undergraduate degree and believe you have sufficient competency to substitute another unit for this one. If so, please see me and we can discuss the possibility of you sitting an exemption test.

Others may have studied statistics “a long time ago”. This unit will hopefully refresh those long-forgotten statistical concepts, as well as introduce several more that – when supported by relevant software – are useful in the workplace.

Last, but by no means least, some of you may not have studied statistics before and perhaps associate this discipline with “sadistics”. It’s my duty over the course of the next three months to assure you this is absolutely not the case.

I wish you all the very best in your DADM (and MBA) studies this trimester and hope you find the unit both enjoyable and challenging. However, having been in this caper for a good while, I’m realistic enough to know some of you might prefer a visit to the dentist instead. But I was hoping to avoid that sadistics theme again.

The goal of this unit is not to turn you into a statistician (heaven forbid!). Instead, the emphasis is on the interpretation of results as opposed to “number crunching” and formula derivation. If at any time you find the unit overwhelming, please don’t hesitate to contact me so that we can work through your concerns together.

Unit content

DADM introduces data analysis and decision-making tools that students can use to manage their day-to-day work. Students will be able to identify situations in which quantitative analysis can support problem solving and decision-making. They will also gain practical experience in applying statistical and decision-analysis techniques and statistical packages (Excel and its add-in PHStat) in business and management contexts. Topics include an introduction to sampling, measurement, variability, uncertainty, statistical tests, forecasting and quantitative approaches to decision-making. This unit provides a foundation for quantitative techniques used in other MBA units.

The goal of the unit

Any manager operating in a business environment requires as much information as possible about the characteristics of that environment. Much of the available information is quantitative – for example, movements in interest rates, stock market prices, money supply and the level of unemployment. Market research surveys are carried out to determine the strength of product demand; an auditor is concerned about the number and size of errors found in account receivables; and a human resources manager may use aptitude test scores, in addition to a subjective assessment of candidates, for the recruitment of personnel. Even in sport, statistics are increasingly used as an objective means to assess player recruitment, to evaluate the strengths and weaknesses of opponents, to gain a tactical advantage during the game itself, to interact with fans (look no further than the AFL’s SuperCoach/DreamTeam), and to inform television viewers (Channel 9’s cricket coverage).

The common features of the above examples are that the information to be absorbed is numerical (quantitative) or categorical (qualitative) and, in its raw form, virtually impossible to comprehend fully. One important role of today’s managers is to make sense of data by summarising it in such a way that a readily understood picture emerges.

This unit introduces data-analysis and decision-making tools useful for students in their day-to-day work. The emphasis is on the use of statistical packages, rather than the mechanical application of formulae, to assist in analysis. It also provides a foundation for quantitative techniques used in other MBA units, including Corporate Finance, Economics, International Management, Marketing, Project Management, Quality Management and Strategic Management.
Learning outcomes

On completion of this unit, students should have an understanding of:

- Data available to aid decision-making within the workplace;
- Statistical packages and add-ins available for analysing business data;
- The application of statistical techniques to practical business decision-making;
- Methods to critically appraise the accuracy, sources and relevance of data and statistical models; and
- How to critically appraise reports and arguments based on such data and models.

Educational principles and graduate attributes

In this unit you’ll be encouraged and facilitated to develop:

- Self-management and independent learning skills through tackling a subject that may initially appear “foreign” to you;
- Competency in obtaining data, whether through primary (experimentation, observation, survey) or secondary (electronic, print) sources;
- The ability to understand and interpret collated data, while having an appreciation that one can use statistics without being a statistician; and
- Proficiency in summarising and expressing your statistical findings to senior management in a clear, concise and non-technical way.
TEACHING AND LEARNING RESPONSIBILITIES

Teaching and learning strategies

Students are encouraged to attend all lectures and to peruse the recommended sections of the textbook prior to class. However, the textbook (Levine, et al) can be over-technical in parts – its greatest plus is the superb Excel add-in, PHStat – so I’d prefer you read more from a general point of view rather than trying to absorb every aspect of the text.

Feel free to stop me during lectures if there’s anything you’re unsure of. You’re unlikely to be the only person experiencing difficulty with a particular concept, so please speak up if in doubt. Much of the material is conceptual but, unlike most other fields of mathematics, statistics lends itself to discussion and interpretation. My interpretation of a particular scenario will usually be one of a range of opinions.

There are no tutorials but I’m available for consultations on request – certainly leading up to the two quizzes and exam. Because some students may be unfamiliar with Excel and PHStat – both of which will be useful for your project – a series of notes will be distributed to assist you attain competency in this area. You’re not obligated to use Excel/PHStat for your project, with some past students having used Minitab, SAS and SPSS instead. Students are welcome to discuss their choice of topic with me and are required to submit a project outline by 4pm on Friday, July 1.

The DADM assessment is aimed at both testing your understanding of the concepts and ensuring that you don’t fall by the wayside. In days of old at UWA, some units’ sole assessment was a 100% exam, an all-or-nothing situation that placed unfair pressure on students. This unit aims to assess you in several different ways – two 15% class quizzes, a 5% project outline, a 30% project and a 35% final exam – with each component (hopefully) not too stressful. However, that’s easy for me to say.

Teaching and learning evaluation

You’ll be asked to complete two evaluations during this unit: the Student Perception of Teaching (SPOT) and the Students’ Unit Reflective Feedback (SURF). The SPOT is optional and is an evaluation of the lecturer and the unit. The SURF is completed online and is a university-wide survey and deals only with the unit. You’ll receive an email from the SURF office inviting you to complete the SURF when it’s activated. We encourage you to complete both evaluations, as your feedback is extremely important and can be used to make changes to the unit or lecturing style where appropriate.

While DADM has received very positive feedback in previous trimesters, there are still ways we could enhance your learning experience. Some initiatives taken on board within the unit include the regular demonstration of statistical software in class; the aggregation of sample quiz and exam questions for revision purposes; the provision of sample “Statistics in Practice” projects as a guide to students; and the use of guest speakers to highlight practical applications of statistics in business.

Attendance

Participation in class, whether through listening to a lecture or getting involved in other activities, is an important part of the learning process therefore it’s important that you attend classes. More formally, the University regulations state that “to complete a course or unit, students shall attend prescribed classes, lectures, seminars and tutorials”. Where a student, due to exceptional circumstances, is unable to attend a scheduled class, he/she is required to obtain prior approval of the unit coordinator to be absent from that class. Any student absent from class without having had such absence approved by the unit coordinator may be referred to the faculty for advice and may be required to withdraw from the unit.

While there’s no Attendance assessment component within DADM, I expect to be notified if you have to miss a lecture, particularly if your absence coincides with a class quiz (Weeks 5 and 9). Those students who anticipate being absent during Exam Week must notify both the Business School and myself in writing well in advance.
CONTACT DETAILS

I strongly advise students to regularly access their student email accounts. I often communicate important information about the unit via email.

<table>
<thead>
<tr>
<th>Unit coordinator/lecturer</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Name</td>
<td>Peter Carter</td>
</tr>
<tr>
<td>Email</td>
<td><a href="mailto:fitzroypete@yahoo.com.au">fitzroypete@yahoo.com.au</a></td>
</tr>
<tr>
<td>Phone</td>
<td>9345 0903</td>
</tr>
<tr>
<td>Consultation hours</td>
<td>By appointment</td>
</tr>
<tr>
<td>Lecture times</td>
<td>Tuesdays, 6.00pm - 9.00pm</td>
</tr>
<tr>
<td>Lecture venue</td>
<td>BUSN: G42 Michael Chaney Case Study Room</td>
</tr>
</tbody>
</table>

Lecturer Details

Peter Carter  
BSc Statistics/Economics (University of WA)  
BA Sports Management/Sports Science (University of Canberra)  

Peter (Pete) Carter began lecturing in DADM at the Graduate School of Management, now the UWA Business School, in Trimester 2, 2000, during which time he has seen many DADM students come and (successfully) go. From 2003 to 2010, Pete also taught the statistics component of the Executive MBA unit MGMT8809 Senior Management Project. He has considerable teaching experience – initially as a statistics lecturer/tutor at the University of Canberra (1992-97), mathematics teacher at the Canberra Institute of Technology (1993-97), and business statistics tutor at both UWA and Murdoch University (2000-03) – and has received outstanding student evaluations, including commendations for Business School teaching awards.

Away from the MBA program, Pete is a Sports section sub-editor and Australian Rules football and cricket columnist at The Sunday Times newspaper, allowing him to indulge his love of all forms of cricket, the East Perth Football Club and Fitzroy Football Club (RIP). He was formerly a sports journalist at The Canberra Times (1994-97) and is the author of Twenty-Five Years Of Amateur Football, 1970-95, the official history of the now-defunct ACT-Monaro Amateur Football League. Prior to returning to Perth, Pete was a recreation supervisor at King Fahad National Guard Hospital in Riyadh, Saudi Arabia (1997-99).

In the deep, dark distant past, when the abacus was still in vogue, Pete began his statistical career at the Australian Bureau of Statistics, Canberra, as a graduate research officer in the International Investment and Banking & Finance sections. He has also worked in the Health Insurance section at the Commonwealth Department of Health, Perth, and as an assistant house parent and mathematics tutor at the Australian Institute of Sport, Canberra. Stints as a florist delivery driver, fast-food caravan cook, restaurant dishwasher, Santa Claus, Subiaco Oval gate attendant, taxi driver and wheat-bin weighbridge officer/grain sampler, while all great fun at the time, were (thankfully) never destined to last.
TEXTBOOK(S) AND RESOURCES

Unit website

http://www.webct.uwa.edu.au

Recommended/required text(s)


**PLEASE NOTE:** Levine (6th edition) is the preferred text, but the 5th edition is also suitable. You’ll receive a cross-referenced (5th v 6th edition) recommended reading list in class.

Levine’s website is: www.pearsonglobaleditions.com/levine

I’ve also produced a “quad-pack”, including lecture notes, quiz and exam revision questions, sample projects and additional reading materials. The lecture notes, revision questions and sample projects will be available in the first class, while the readings can be purchased at the UWA bookshop.

Alternative Textbooks

For those wanting an Australian angle on statistics, I recommend the following book as a support to Levine:


Two textbooks with an “alternative” approach to statistics are:


Software requirements

The textbook has an Excel Guide (Appendix D) that includes the PHStat add-in, which is downloadable at www.pearsonglobaleditions.com/levine. A prior knowledge of Excel is desirable but not essential. Applications of Excel and PHStat output are included in the lecture notes, with students required to interpret statistical output in both quizzes and the exam. Students are welcome to use a statistical package(s) of their choice to summarise data in their Statistics in Practice project.

Approved Calculators for Examinations

As much of the unit is based on interpreting statistical output, there’s no need to purchase a specific calculator. A standard University-approved Casio or Sharp scientific calculator is more than adequate. The University only permits the use of calculators in examinations if the calculator has an “Approved” sticker. If a student doesn’t have an Approved sticker on his/her calculator, he/she won’t be permitted to use the calculator. Since this is a University-wide policy, it isn’t possible for unit coordinators to grant on-the-spot exemptions. Calculators can be approved at the Business School Postgraduate Student Centre (BSPSC) between 8am and 6pm, Monday to Friday.

Additional resources and reading material

In addition to the recommended textbook, I have a number of statistical references you’re welcome to look at if you’re a glutton for punishment. Feel free to borrow any of the following:

Business Databases

In the Week 3 lecture (May 31), Michelle Mahoney from the UWA Business Library will outline several specialist databases that may be of use for your “Statistics in Practice” project, including:

- Australian Bureau of Statistics (www.abs.gov.au) provides access to all ABS publications from 1998 onwards, including spreadsheets from the ABS Time Series.

- CDATA06, also produced by the ABS, provides a range of demographic and social statistics collected from the 2006 Census.

- DatAnalysis provides comprehensive data for all Australian Stock Exchange companies, with reports updated daily from relevant ASX announcements.

- FinAnalysis provides a 12-year history of detailed financial information – with over 400 data items – for all companies listed on the ASX.

- Global Market Information Database, a service produced by Euromonitor that provides a range of information designed for marketing and doing business internationally.


- World Development Indicators contains over 695 social, economic, financial, natural resources and environmental indicators and time-series data from the World Bank from 1960-2005 for over 220 countries.

In the Week 11 (July 26) lecture, former MBA student Chris Jordan – now a business improvement consultant – will discuss a range of statistical business applications.

Statistical Websites

The following 10 non-business websites/links might inspire you for your project – or be a handy diversion when/if the going gets tough.

- www.afl.com.au (Australian Football League)
- www.atptennis.com (Association of Tennis Professionals)
- www.cricinfo.com (International Cricket)
- www.citypopulation.de (Database for Major Cities in the World)
- www.journoz.com/stats.html (Information Sources for Australian Journalists)
- www.pgatour.com (Professional Golf Association)
- www.premierleague.com (English Premier League)
- www.reiwa.com.au (Real Estate Institute of W.A.)
- www.worldweather.org (World Weather Information Service)

And bizarrely, there is a link dedicated to statistics jokes!

- www.ilstu.edu/~gcramsey/Gallery.html (Gary Ramseyer’s Website of Statistics Jokes)
<table>
<thead>
<tr>
<th>WEEK: LECTURE</th>
<th>TOPICS</th>
<th>ADDITIONAL READING</th>
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<tbody>
<tr>
<td>1: May 17</td>
<td><strong>MODULE 1: Course Introduction</strong></td>
<td>Economic Focus:</td>
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<td></td>
<td>Introduction &amp; Data Collection</td>
<td>The Reserve Army; Questionnaire Design; Statistics Jokes; Study Shows 139% Of</td>
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<td>Sampling &amp; Sampling Distributions</td>
<td>Studies Misuse Statistics; How To Make An Imperfect Census Count; Welcome To The</td>
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<td>Quote Garden!; What Is Statistics; Basic Sampling Concepts; Sampling Definitions</td>
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<tr>
<td>2: May 24</td>
<td>Presenting Data in Tables &amp; Charts</td>
<td>Abuse Of Statistics; How To Lie With Statistics: The Well-Chosen Average</td>
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<td></td>
<td>Numerical Descriptive Measures</td>
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<tr>
<td>3: May 31</td>
<td><strong>GUEST SPEAKER: Michelle Mahoney</strong> (Business Library) <strong>MODULE 2: Dealing With Risk &amp; Uncertainty</strong> Basic Probability Some Important Discrete Probability Distributions</td>
<td>Computing Probabilities Of Rolling Matching Dice; Theory Of Probability</td>
</tr>
<tr>
<td>4: June 7</td>
<td>The Normal Distribution &amp; Other Continuous Distributions Sampling &amp; Sampling Distributions (continued)</td>
<td>Standard Deviation</td>
</tr>
<tr>
<td>5: June 14</td>
<td><strong>QUIZ 1 (15%)</strong></td>
<td>Estimating Confidence Intervals; So How Come A Survey Of 1,600 People Can Tell Me What About 250 Million Are Thinking!</td>
</tr>
<tr>
<td>6: June 21</td>
<td><strong>MODULE 4: Prediction &amp; Forecasting</strong></td>
<td>Celebrate A Beer With A Wage Rise; Correlation And Causation: Misuse And Misconception Of Statistical Facts; Pets And Healthy Hearts; Sydney To Hobart Yacht Race Winning Times</td>
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<tr>
<td></td>
<td>Simple Linear Regression</td>
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<td></td>
<td>Introduction to Multiple Regression</td>
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<tr>
<td>7: June 28</td>
<td>Multiple Regression Model Building</td>
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<td></td>
<td>Multiple-Regression Demonstration</td>
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<td></td>
<td><strong>PROJECT OUTLINE DUE (5%)</strong></td>
<td>[4pm, Friday, July 1]</td>
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<tr>
<td>Date</td>
<td>Activity</td>
<td>Notes</td>
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<tr>
<td>8: July 5</td>
<td><strong>MODULE 3: Comparing Group Differences</strong></td>
<td>Time-Series Forecasting &amp; Index Numbers</td>
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<tr>
<td></td>
<td><strong>Fundamentals of Hypothesis Testing:</strong></td>
<td>All-Ordinaries Index; Average Daily Unleaded Fuel Prices; Index Numbers And Time-Series Analysis; Time-Series Forecasting Of Monthly Data; Trend-Seasonal Analysis; Toss Out The Toss-Up; Bias In Heads-Or-Tails; Math Talk: The (Un)Truth About Statistics; The Decision Matrix On Trial: The OJ Simpson Trial Analogy</td>
</tr>
<tr>
<td>9: July 12</td>
<td><strong>QUIZ 2 (15%)</strong></td>
<td>Two-Sample Tests (continued)</td>
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<tr>
<td></td>
<td><strong>Fundamentals of Hypothesis Testing:</strong></td>
<td>One-Sample Tests</td>
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<td></td>
<td><strong>Two-Sample Tests</strong></td>
<td>The Australian Unity Wellbeing Index; Statisticians – Keep It Simple</td>
</tr>
<tr>
<td>10: July 19</td>
<td><strong>Two-Sample Tests (continued)</strong></td>
<td>Analysis of Variance</td>
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<td></td>
<td><strong>Chi-Square Tests &amp; Non-Parametric Tests</strong></td>
<td>The Australian Unity Wellbeing Index; Statisticians – Keep It Simple</td>
</tr>
<tr>
<td>11: July 26</td>
<td><strong>GUEST SPEAKER: Chris Jordan (Business Improvement Consultant)</strong></td>
<td>MODULE 5: Business Applications</td>
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<td></td>
<td><strong>MODULE 5: Business Applications</strong></td>
<td>GUEST SPEAKER: Chris Jordan (Business Improvement Consultant)</td>
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<tr>
<td></td>
<td><strong>Chi-Square Tests &amp; Non-Parametric Tests</strong></td>
<td>MODULE 5: Business Applications</td>
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<tr>
<td></td>
<td><strong>PROJECT DUE (30%)</strong></td>
<td>4pm, Friday, July 29</td>
</tr>
<tr>
<td>12: August 2</td>
<td><strong>Statistical Applications in Quality Management</strong></td>
<td>Statistical Applications in Quality Management</td>
</tr>
<tr>
<td></td>
<td><strong>Decision Making</strong></td>
<td>Some Out-Of-Control Evidence</td>
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<tr>
<td>13: August 6-13</td>
<td><strong>FINAL EXAM (35%) – Good Luck!!!</strong></td>
<td>FINAL EXAM (35%) – Good Luck!!!</td>
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</tbody>
</table>

**PLEASE NOTE:** This schedule is subject to change at the lecturer's discretion.
ASSESSMENT MECHANISM

The purpose of assessment

There are a number of reasons for having assessable tasks as part of an academic program. The assessable tasks are designed to encourage you to explore and understand the subject more fully. The fact we grade your work provides you with an indication of how much you have achieved. Providing feedback on your work also serves as part of the learning process.

Assessment mechanism summary

<table>
<thead>
<tr>
<th>Item</th>
<th>Weight</th>
<th>Due date</th>
<th>Remarks</th>
<th>Submission</th>
</tr>
</thead>
<tbody>
<tr>
<td>Quiz 1</td>
<td>15%</td>
<td>Tuesday, June 14</td>
<td>Closed book and based on material covered in Lectures 1-4.</td>
<td>In Class</td>
</tr>
<tr>
<td>Project Outline</td>
<td>5%</td>
<td>Friday, July 1 (4pm)</td>
<td>Maximum of 500 words, with bullet points acceptable. Email submissions accepted.</td>
<td>Uniprint</td>
</tr>
<tr>
<td>Quiz 2</td>
<td>15%</td>
<td>Tuesday, July 12</td>
<td>Closed book and based on material covered in Lectures 5-8.</td>
<td>In Class</td>
</tr>
<tr>
<td>&quot;Statistics in Practice&quot; Project</td>
<td>30%</td>
<td>Friday, July 29 (4pm)</td>
<td>Maximum of 2000 words adopting either a multiple-regression or time-series approach. Email submissions NOT accepted.</td>
<td>Uniprint</td>
</tr>
<tr>
<td>Final Exam</td>
<td>35%</td>
<td>August 6-13</td>
<td>Closed book (students are allowed to take a double-side A4 page of notes in) and based on ALL material, with an emphasis on material covered in Lectures 9-12.</td>
<td>TBA</td>
</tr>
<tr>
<td>Total</td>
<td>100%</td>
<td>Final marks will be available before Trimester 3 begins.</td>
<td>Final marks may be scaled, with the class mean between 68 and 72% and standard deviation 10%.</td>
<td></td>
</tr>
</tbody>
</table>

Note 1: Results may be subject to scaling and standardisation under faculty policy and are not necessarily the sum of the component parts.

Note 2: Your assessed work may also be used for quality assurance purposes, including to assess the level of achievement of learning outcomes as required for accreditation and audit purposes. The findings may be used to implement changes aimed at improving the quality of Business School programs. Any material used for such processes will be treated confidentially and the outcome won’t affect your grade for the unit.
Assessment components

Assessment item # 1 - Quizzes (2@15%)

Objectives:
The main purposes of the two class quizzes are to help you keep up to speed with the workload in this unit and provide you with feedback on your progress. Most topics are cumulative, so if you don’t understand foundational material you may find it difficult to understand future topics.

Details:
The quizzes will be held at the start of the Week 5 (June 14) and Week 9 (July 12) lectures. If a student cannot attend a particular quiz, he/she must notify me in advance so alternative arrangements can be made. Each quiz will be of one-hour duration and consist of 10 multiple-choice and two short-answer questions, with formula sheets provided. They will be closed book and each is worth 15% of your final mark. Quiz revision questions will be distributed in the first lecture.

Assessment item # 2 - Project Outline (5%)

Objectives:
I prefer students to complete the project in pairs, though I appreciate this isn’t always possible because of work commitments, so you’re most welcome to “go solo”. As there’s no Peer Assessment in this unit, the onus is on each partner to contribute equally to the project. In order to give you sufficient feedback before you submit the project, students are required to hand in a project outline (one per pair).

Details:
The project outline, worth 5% of your final mark and a maximum of 500 words, is due at 4pm on Friday, July 1. It can be submitted to me either by email, in person or Uniprint (see Page 14). Before submission, please read Assessment item # 3 below. Guidelines for this outline will be provided in a separate handout.

Assessment item # 3 – Statistics in Practice Project (30%)

Objectives:
The Statistics in Practice project is designed to develop students’ skills in the correct usage of statistical techniques and in interpreting data for making managerial decisions. The main task for each pair/individual is to analyse real-life data and prepare a report for management based on your analysis. The focus is on using statistics as a support tool to your discussion – not as the sole basis of discussion itself. The data need not be of a business or financial nature – indeed, many past students have chosen data relating to areas of general interest, including sport. Generating your own dataset via a survey, instead of using secondary sources of data, is acceptable. The purposes of the project include:

Showing how summary statistics and charts can be used to succinctly present sample data;

AND EITHER

- Identifying the most efficient combination of explanatory variables to predict the response variable for cross-sectional data (multiple regression);

OR

- Applying techniques to forecast the response variable for longitudinal data (time series).

Case-specific examples will be provided as handouts.
Details:

Reports, of a maximum of 2000 words, should be handed to me in class or submitted by Uniprint (see Page 14) no later than 4pm on Friday, July 29. I hope to return the marked projects to you by the start of Exam Week. Unlike your project outline, I won’t accept email submissions. A penalty will apply to projects exceeding the specified word limit (5% for each extra 300 words, or part thereof), to a maximum of 10%. There will be a 10% deduction if a word count is not included. A standard cover sheet should be used and a receipt will be issued. Late submissions will be penalised 5% per day, with this penalty only waived in exceptional circumstances. The marks breakdown is:

<table>
<thead>
<tr>
<th>Section</th>
<th>Task</th>
<th>Marks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cover</td>
<td>Includes your name, the title of the report and its word count. Presentation is vital, so this is an opportunity to exhibit some flair and creativity.</td>
<td>5</td>
</tr>
<tr>
<td>Contents</td>
<td>Gives a detailed outline of the report, together with page numbers.</td>
<td>5</td>
</tr>
<tr>
<td>Executive Summary</td>
<td>A single paragraph describing in non-numeric terms the most important facts and conclusions from the report. This is often easier to write last.</td>
<td>5</td>
</tr>
<tr>
<td>Introduction</td>
<td>Several paragraphs briefly summarising the background, the question(s) of interest, and the relevant dataset(s). The key variables should be briefly outlined and relevant assumptions discussed.</td>
<td>10</td>
</tr>
<tr>
<td>Analysis &amp; Methods</td>
<td>Develop points covered in the Introduction and display data graphically. Because the report has been prepared for senior management, with little exposure to statistics, any interpretations should be explained in clear, concise terms. It isn’t necessary to show complex formulae or in-depth computations. A detailed break-up of A&amp;M marks will be provided in a separate handout.</td>
<td>50</td>
</tr>
<tr>
<td>Conclusions &amp; Summary</td>
<td>Summarises the detail presented in the previous section and discusses possible recommendations.</td>
<td>10</td>
</tr>
<tr>
<td>References</td>
<td>Mention all data sources, websites, textbooks and articles referred to, plus all software used.</td>
<td>5</td>
</tr>
<tr>
<td>Appendices</td>
<td>Should include all tables and graphs not directly referred to in the report. All tables and graphs should have a number and a title.</td>
<td>10</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>The report should be a maximum of 2000 words, excluding Contents, charts and tables, and Appendices.</td>
<td><strong>100</strong></td>
</tr>
</tbody>
</table>
**Assessment item # 4 – Final Exam (35%)**

**Objectives:**

The final exam is structured to assess if you have **achieved the learning outcomes** of the unit.

**Details:**

The exam, covering **ALL** lecture material, but with an emphasis on later topics, is scheduled during the exam period beginning Saturday, August 6. If a student cannot attend the exam on the specified date, he/she must notify both the Business School and myself in writing well in advance so alternative arrangements can be made. The exam will be of **two hours plus 10 minutes reading** duration and will comprise a mixture of multiple-choice and short-answer questions. It will be **closed book** – although you’ll be provided with a **formula sheet** and are allowed to take in one **double-sided A4 page of notes** – and is **worth 35%** of your final mark. Exam **revision questions** will be distributed in the first lecture.

**Submission of assignments**

Students can submit their project outline and Statistics in Practice project either:

- In an electronic format via the Uniprint website [www.uniprint.uwa.edu.au](http://www.uniprint.uwa.edu.au), clicking on “Student Assignments” and following the instructions, or
- During class but please remember to attach an Assignment Cover sheet (projects only) to the front of your assignment. This can be downloaded from the Business School Current Students’ web page [http://www.business.uwa.edu.au/students/assessments](http://www.business.uwa.edu.au/students/assessments), or
- By email (project outlines only).

Since students no longer have a print quota, they can only submit their assignment at the Business School Postgraduate Student Centre when they have been granted additional time to complete an assignment or have missed the submission deadline.

**Student Guild**

Phone: (+61 8) 6488 2295  
Facsimile: (+61 8) 6488 1041  
E-mail: enquiries@guild.uwa.edu.au  
Website: [http://www.guild.uwa.edu.au](http://www.guild.uwa.edu.au)

**Charter of Student Rights and Responsibilities**

The Charter of Student Rights and Responsibilities outlines the fundamental rights and responsibilities of students who undertake their education at UWA (see [http://handbooks.uwa.edu.au/undergraduate/poliproc/policies/StudentRights](http://handbooks.uwa.edu.au/undergraduate/poliproc/policies/StudentRights)).

**Appeals against academic assessment**

The University provides the opportunity for students to lodge an appeal against assessment results and/or progress status (see [http://www.secretariat.uwa.edu.au/home/policies/appeals](http://www.secretariat.uwa.edu.au/home/policies/appeals)).