COMM5005
Quantitative Methods for Business

Course Outline
Semester 1, 2016

Part A: Course-Specific Information

Students are also expected to have read and be familiar with Part B Supplement to All Course Outlines. This contains Policies on Student Responsibilities and Support, Including Special Consideration, Plagiarism and Key Dates. It also contains the Business School PROGRAM LEARNING GOALS.

Course website at: http://moodle.telt.unsw.edu.au
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1 STAFF CONTACT DETAILS

The **lecturer in charge** for this course is Mrs Judith Watson. Judith will be available for consultation Monday 3:00–5:00 p.m., Tuesday 10:30 a.m.–11:30 am, or by appointment.
Office: Quad 3126 (located in the Western wing, third floor of the Quadrangle building above the UNSW bookshop).
Email: J.Watson@unsw.edu.au
Phone: 9385 3285

The tutor is Gautam Gangopadhyay. His contact details will be made available on the course website.

2 COURSE DETAILS

2.1 Teaching Times and Locations

In weeks 1–12, you should attend a two-hour lecture on Monday from 6:00–8:00 p.m. or Tuesday 12:00–2:00 p.m. You should also attend a one-hour tutorial in Weeks 2–13.

Note that there is a public holiday in Week 8 on Monday 25 April. Students who normally attend the Monday lecture are asked to come to the Tuesday 26th lecture instead if possible or else to watch the online recording of the Tuesday lecture.

For latest information about lecture and tutorial locations see: http://www.timetable.unsw.edu.au/current/subjectSearch.html

2.2 Units of Credit

This course is worth six units of credit.

2.3 Summary of Course

This course provides an introduction to the basic mathematical and statistical tools needed in a business degree. There is an emphasis on problem solving by both manual and computer methods. In the first half of the course we focus on algebra and graphs, financial mathematics and optimisation methods including linear programming and calculus. The second half focuses on probability, descriptive and inferential statistics and analysing data.

2.4 Aims and Relationship to Other Courses

This course aims to enhance your ability to analyse financial and economic data and thereby to assist in making business decisions. It is one of the three data analysis core courses of the MCom program and is recommended for students in specialisations where quantitative skills are required. It is designed for those who have had little or no quantitative training in their undergraduate degree but who need mathematical and statistical skills for specialisations in the areas of Finance, Economics, Accounting and
Business Strategy. Students of these disciplines who already have a good understanding of basic statistics may benefit from taking ECON5248 Business Forecasting as their core course. Note that it is only offered in Semester 1. While the skills learned in COMM5005 are also relevant for other MCom specialisations, students from Marketing, Information Systems and Management disciplines will usually find COMM5011 Data Analysis for Business more appropriate as their data analysis core course. That course has a lesser focus on mathematics and a greater focus on analysing text data.

2.5 Student Learning Outcomes
The Course Learning Outcomes are what you should be able to DO by the end of this course if you participate fully in learning activities and successfully complete the assessment items.

The Learning Outcomes in this course also help you to achieve some of the overall Program Learning Goals and Outcomes for all postgraduate coursework students in the Business School. Program Learning Goals are what we want you to BE or HAVE by the time you successfully complete your degree (e.g. ‘be an effective team player’). You demonstrate this by achieving specific Program Learning Outcomes - what you are able to DO by the end of your degree (e.g. ‘participate collaboratively in teams’).

<table>
<thead>
<tr>
<th>Business School Postgraduate Coursework Program Learning Goals and Outcomes</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>1. Knowledge:</strong> Our graduates will have current disciplinary or interdisciplinary knowledge applicable in local and global contexts. You should be able to identify and apply current knowledge of disciplinary or interdisciplinary theory and professional practice to business in local and global environments.</td>
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<tr>
<td><strong>2. Critical thinking and problem solving:</strong> Our graduates will have critical thinking and problem solving skills applicable to business and management practice or issues. You should be able to identify, research and analyse complex issues and problems in business and/or management, and propose appropriate and well-justified solutions.</td>
</tr>
</tbody>
</table>
| **3. Communication:** Our graduates will be effective communicators in professional contexts. You should be able to:  
  a. Produce written documents that communicate complex disciplinary ideas and information effectively for the intended audience and purpose, and  
  b. Produce oral presentations that communicate complex disciplinary ideas and information effectively for the intended audience and purpose. |
| **4. Teamwork:** Our graduates will be effective team participants. You should be able to participate collaboratively and responsibly in teams, and reflect on your own teamwork, and on the team’s processes and ability to achieve outcomes. |
| **5. Ethical, social and environmental responsibility:** Our graduates will have a sound awareness of ethical, social, cultural and environmental implications of business issues and practice. You should be able to:  
  a. Identify and assess ethical, environmental and/or sustainability considerations in business decision-making and practice, and  
  b. Consider social and cultural implications of business and/or management practice. |
| **6. Leadership:** Our graduates will have an understanding of effective leadership. (MBA and MBT programs only). You should be able to reflect on your personal leadership experience, and on the capabilities necessary for leadership. |
The following table shows how your Course Learning Outcomes relate to the overall Program Learning Goals and Outcomes, and indicates where these are assessed (they may also be developed in tutorials and other activities):

<table>
<thead>
<tr>
<th>Program Learning Goals and Outcomes</th>
<th>Course Learning Outcomes</th>
<th>Course Assessment Item</th>
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</thead>
<tbody>
<tr>
<td>This course helps you to achieve the following learning goals for all Business School postgraduate coursework students:</td>
<td>On successful completion of the course, you should be able to:</td>
<td>This learning outcome will be assessed in the following items:</td>
</tr>
</tbody>
</table>
| Knowledge                          | Solve problems using a variety of mathematical and statistical techniques relevant to a postgraduate business degree. Use a calculator and a spreadsheet program (Microsoft Excel) effectively to perform calculations. | • Tutorial problems  
• Assignment  
• Exams  
• Online activities |
| Critical thinking and problem solving | Engage in independent and reflective learning. Analyse business data and problems and apply critical thinking. | • Tutorial problems  
• Assignment  
• Exams  
• Online activities |
| Written communication               | Be familiar with relevant mathematical and statistical terminology (this may take more effort if you previously studied these subjects in a foreign language). Evaluate, draw conclusions and produce a business report. | • Exam  
• Assignment |
| Oral communication                  | Participate in general and small group classroom discussions. | Not specifically assessed. |
| Teamwork                           | Work collaboratively to discuss and solve problems. | Not specifically assessed. |
| Ethical, environmental and sustainability considerations | Identify ethical issues in business practice and statistical reporting. | Not specifically assessed. |
| Social and cultural awareness       | Not specifically addressed in this course. | |

3 LEARNING AND TEACHING ACTIVITIES

3.1 Approach to Learning and Teaching in the Course
This course aims to enhance your ability to analyse financial and economic data and thereby to assist in making business decisions. It also aims to prepare you for further MCom courses which require the use of numerical skills. Mathematical skills can only be acquired by sustained practice in problem solving. It is often some years since
postgraduate students have used basic techniques so renewing “rusty” skills is an important objective. You must learn to organise your independent study and practise a sufficient number of problems to gain a thorough understanding of concepts and how to apply them.

3.2 Learning Activities and Teaching Strategies

In this course you are expected to be an active learner rather than just sitting and listening in class. This year we are trying to make lectures even more interactive by using the new Active Learning Platform technology. Using this system you can upload data via your internet enabled device (laptop, tablet or phone). This will give you the opportunity to register your own individual input for quizzes, class example questions and opinions.

- Preparation for the lecture. Each week on Moodle you will find a list of key concepts that you need to revise or learn by reading the textbook, using online resources and/or working through examples.
- When you come to the lecture there will a short quiz to test your understanding of the key concepts.
- During the lecture many examples will be demonstrated step-by-step and you will also be expected to attempt problems by yourself or in a small group. Make sure you bring a scientific calculator to do the calculations. Once your answers are uploaded you will be able to compare them to the answers of other members of the class.
- You will also be encouraged to ask questions and to give opinions.
- After seeing lecture examples you need to try more problems by yourself after class and to attempt the questions set for the following tutorial.
- In the tutorial you will actively work with a small group of students to compare your prepared answers and discuss solutions. The group will identify those problems which your tutor will need to explain in more detail.

It is difficult to succeed in this course without putting in regular effort and undertaking out-of-class study. In order to promote this, the assessment has a number of small tasks spread through the session. These are designed to give you good feedback to help you learn while attempting them. To stimulate and reward good tutorial preparation your homework attempts will be collected and marked on three occasions.

The assignment in this course will test your ability to analyse data, to use the Microsoft Excel program, and to think critically. Some knowledge of current events in business and research into the relevant regions of Australia will add to your understanding of the assignment material.

You will also need to develop good calculator skills in order to perform well in exams. Familiarity with the use of memories and built-in functions will increase your speed in solving problems. Students who have not practiced maths for some time can be quite slow in doing calculations and this can affect their exam results adversely.

The object of this course is not to memorise information. Therefore the mid-session test and final exam will have an open-book format. The focus of the assessment will be on your understanding of concepts, your ability to apply formulae appropriately, your problem solving and critical thinking.
4 ASSESSMENT

4.1 Formal Requirements
In order to pass this course, you must:
- achieve a composite mark of at least 50; and
- make a satisfactory attempt at ALL assessment tasks (see below).

4.2 Assessment Details

<table>
<thead>
<tr>
<th>Assessment Task</th>
<th>Weighting</th>
<th>Length</th>
<th>Due Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>2 x Online Quizzes</td>
<td>4% each</td>
<td>No time limit</td>
<td>Weeks 5 and 9</td>
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<td></td>
<td>(8% total)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5 x eLearning tutorials</td>
<td>2% each</td>
<td>No time limit</td>
<td>Available Weeks 2, 8, 11, 12, 13</td>
</tr>
<tr>
<td></td>
<td>(10% total)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Midsession Test</td>
<td>12%</td>
<td>30 minutes</td>
<td>During your normal tutorial time in week 7</td>
</tr>
<tr>
<td>Two problems on topics from Lectures 1–6</td>
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<tr>
<td>Assignment</td>
<td>15%</td>
<td>12 pages including tables or graphs</td>
<td>11.55 pm Tuesday May 10</td>
</tr>
<tr>
<td>Tutorial preparation and participation</td>
<td>5%</td>
<td>As per questions set</td>
<td>Marked three times during Weeks 2-13.</td>
</tr>
<tr>
<td></td>
<td>(best 2 of 3)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Final Exam</td>
<td>50%</td>
<td>3 hours</td>
<td>Exam period (June 10-27)</td>
</tr>
<tr>
<td>Multiple choice questions and problems on topics from Lectures 1–12</td>
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</table>

Make sure that you read Part B of this outline to understand the special consideration process which may apply if you are affected by illness or misadventure.

You also need to be aware of the policies on plagiarism in relation to submitting work that is your own. You will find information in Part B.
4.3 Online Quiz Format

The online quizzes can be accessed in the assessment section of the course website. They are designed to be used as learning tools as well as assessing your quantitative skills development. They must be attempted by you without assistance. They will each be available for a one week period, beginning on Monday morning and finishing on Sunday night, so should be fitted easily into your work/study schedules. You will be allowed two attempts for each quiz and the higher of the two marks will be counted. You should be able to complete each attempt within 30 minutes.

You are encouraged to use the feedback from your first attempt to check the reasons for any mistakes. You should not expect to be given exactly the same questions on your second attempt, however further practice may be rewarded with improved marks. Research in a similar course has shown that, after controlling for other factors, final examination marks for the average student were higher when they had made an attempt on all online quizzes than when they had not.

Quiz dates:
1. Week 5: Monday April 4, 1.00 a.m. – Sunday April 10, 11.55 p.m.
2. Week 9: Monday May 2, 1.00 a.m. – Sunday May 8, 11.55 p.m.

Occasionally unscheduled shutdown periods may occur so try not to leave your attempts till the last minute.

The questions in online quizzes will require you to calculate answers. Care should be taken to avoid rounding errors by keeping full numbers in memory and giving your answers to the required number of decimal places. For financial maths questions, a tolerance of five units of the least significant unit will be used i.e. if the correct answer is 1.234 answers between 1.229 and 1.239 will be accepted as being correct. In other questions a lower tolerance may be appropriate.

When you enter an answer do not include symbols such as $.

4.4 eLearning Tutorials Format

Five online tutorials have been developed as a project in conjunction with the Adaptive eLearning Research group at UNSW (now operating as Smart Sparrow Pty Ltd). They will give you feedback to help you while you progress through a series of questions. The first two tutorials will assist you to make sure you are on the right track in graphing linear equations and later in using the graphical method for linear programming. The other three will check your use of normal tables and understanding of hypothesis tests and regression analysis output.

The tutorials will be scored with points deducted for each extra attempt you have at a question up to a reasonable limit. The maximum score for each tutorial will vary according to the number of questions but your score will be converted to a mark out of 2 for this course. A score of 240/260 would convert to a mark of 1.85.

The eLearning Tutorials will be available as follows:
Tutorial 1, during Week 2: Monday March 7, 1.00 a.m. – Sunday March 13, 11.55 p.m.
Tutorial 2, during Week 8: Monday April 25, 1.00 a.m. – Sunday May 1, 11.55 p.m.
Tutorial 3, during Week 11: Monday May 16, 1.00 a.m. – Sunday May 22, 11.55 p.m.
Tutorial 4, during Week 12: Monday May 23, 1.00 a.m. – Sunday May 29, 11.55 p.m.
Tutorial 5, during Week 13: Monday May 30, 1.00 a.m. – Sunday June 5, 11.55 p.m.

Apart from completing the tutorials within the designated weeks there is no other time limit and you may log-in more than once to complete the tutorial.
To access further information and the tutorials themselves you will need to go to the Assessment section of the course website.

4.5 Assignment Format and Submission Procedure

The assignment will test your ability to address a business problem by selecting relevant data, carrying out statistical analysis using an Excel spreadsheet then using critical analysis to make recommendations. Your will be required to show good writing skills in your report and give a clear explanation of the results you obtain. Marks will be allocated on the basis of accuracy and the quality of your interpretation, arguments and referencing. Statistical calculations must be shown on the spreadsheet.

The assignment topic will be posted on the website by Week 3. To submit your assignment:

1. Upload two files to the course website by the due date:
   (a) your assignment Excel spreadsheet showing data and statistical calculations
   (b) the .doc file with your report

   The final date for submission for all students is **Tuesday May 10 at 11.55pm**.

2. Place a hard copy of the report with cover page attached in the assignment box marked COMM5005 outside the Western Foyer of the Business School building as soon as is practical after your online submission.

4.5.1 Late Submission

Unless approval for an extension is given on medical grounds (supported by a medical certificate) there will be a penalty of 1 mark per calendar day for late submission of assignments.

4.6 Tutorial Preparation and Participation

In mathematical and statistical courses we learn most by attempting problems. In order to stimulate and reward good tutorial preparation your homework attempts and class participation will marked on three occasions. Students will be informed at the end of the tutorial that collection of homework will occur. Therefore you should use a pen with a different coloured ink when adding notes or revising answers in your tutorials. Marks will be awarded on the effort made in participating in tutorial discussion as well as quality of homework preparation and accuracy of answers. If you are unable to finish a question, show as much working as possible and ask about it in class. Your best two class preparation/participation marks out of three will be counted.

4.7 Midsession and Final Exam Format

The Midsession Exam will consist of two problems with several parts covering Lecture 1 – 6 topics. The Final Exam will consist of 16 multiple choice questions and a number of problems in several parts. It will cover both sections of the course from Lectures 1 – 12. Calculations will need to be shown for problem questions. Sample exams similar in format to these will be put up on course website. Students should note that, given changes in the course content, some questions from past exam papers for this subject may no longer be relevant. The exams will be open book ones.
4.8 Quality Assurance

The Business School is actively monitoring student learning and quality of the student experience in all its programs. A random selection of completed assessment tasks may be used for quality assurance, such as to determine the extent to which program learning goals are being achieved. The information is required for accreditation purposes, and aggregated findings will be used to inform changes aimed at improving the quality of Business School programs. All material used for such processes will be treated as confidential and will not be related to course grades.

5 COURSE EVALUATION AND DEVELOPMENT

Each year feedback is sought from students and other stakeholders about the courses offered in the School and continual improvements are made based on this feedback. UNSW's Course and Teaching Evaluation and Improvement (CATEI) Process is one of the ways in which student evaluative feedback is gathered. You are strongly encouraged to take part in the feedback process. Feedback is also sought at the end of each eLearning Tutorials. This feedback from students has been used to make the questions clearer and to improve the hints provided for incorrect answers so please continue to contribute to this process.

6 COURSE RESOURCES

6.1 Books

There are two required textbooks for this course. For the first six lectures we use:


<table>
<thead>
<tr>
<th>Format</th>
<th>ISBN</th>
<th>Available to purchase from</th>
</tr>
</thead>
<tbody>
<tr>
<td>Text Standalone</td>
<td>9781292021140</td>
<td>UNSW bookstore or <a href="http://www.pearson.com.au/9781292021140">http://www.pearson.com.au/9781292021140</a></td>
</tr>
</tbody>
</table>

This book is available in two versions with different covers. The New International edition (grey cover) contains the same material as the 13th ed. US version which has an orange and blue cover.

For the second half of the course we will use:


<table>
<thead>
<tr>
<th>Format</th>
<th>ISBN</th>
<th>Available to Purchase From</th>
</tr>
</thead>
<tbody>
<tr>
<td>Text standalone</td>
<td>9781486018956</td>
<td>UNSW Bookstore</td>
</tr>
<tr>
<td>Text + MyMathLab and eText</td>
<td>9781488608834</td>
<td>UNSW Bookstore</td>
</tr>
</tbody>
</table>
Some students may wish to purchase extra interactive content or other packages. Note that links to the student solutions manual and data sets will be available on the course materials section of the course website for download. More information will be made available on our course website in the course resources section. Please be aware that computers are not permitted in our open book exams so some material such as statistical tables might need to be printed if you choose an e-book.

Reference texts that should be available in the library are:


6.2 Websites

The course website can be accessed at http://moodle.telt.unsw.edu.au. Lecture notes will be made available there prior to each lecture. You should print these out or bring to lectures on your device so that extra information and your own notes may be added.

The tutorial questions for each week will also be placed on the website. You should also check the website for assignment questions, practice exam questions, data sources, online quizzes, eLearning Tutorials and other useful information. You will need to upload your assignment and accompanying spreadsheet to the course website as well as giving us a hard copy of the report.

You will also find that you have been enrolled in the Moodle website called Figuring It Out (Maths/Stats). This site contains a large number of specially selected online resources for you to explore to revise basic concepts and increase your understanding of topics in COMM5005 and some additional related areas. Previously many students made use of the statistics glossary to help them understand terminology, the Lighting Up Statistics cartoon videos we are creating and many other resources which have been collected in ten maths and statistics categories. This semester we will continue online support in Figuring It Out. There will be two evening sessions of online PASS each week (one in mathematics and one in statistics) where you can seek help from an experienced student.

6.3 Harvard Online Courses

The UNSW Business School is making available to students a number of resources from Harvard Business Publishing. In COMM5005 we will have two online learning modules available for you to use as additional resources. These are Mathematics for Management and Quantitative Methods. Each section consists of a pre-test which you can try, material from various topics arranged in a number of screens with practice exercises and a final test. You can start working through these at your own pace prior to the commencement of session to give yourself a good preparation. Note that the tests are purely for practice purposes and marks for them will not count towards your
assessment in COMM5005. For a link to register for the Harvard material and more information about other resources see the Course materials section of the website.

6.4 Calculator
A basic scientific calculator is required for this course and it must be approved for use in exams. It must be able to perform logarithmic and exponential calculations such as \( \ln x, e^x \) and \( x^y \). The calculator must not be a programmable one (i.e. should not have an alpha-numeric keypad) or have a graphic display. It should not be capable of storing or solving equations, differentiation or factoring. For a list of approved calculators see https://student.unsw.edu.au/exam-approved-calculators-and-computers

You should take the calculator to the Business School Student Centre to have the approval sticker attached. If you need to purchase a new calculator, keep in mind that it will be desirable to have a two variable statistical mode to perform linear regression (LR) calculations.

6.5 Computer and Software
For lectures you will need to bring a laptop, tablet or phone which has an internet connection. For homework and your assignment you will need to use a computer with the Microsoft Excel program installed. On a Windows machine make sure that you have the version that enables Analysis Toolpak Add-ins to be used. On a Mac, the Excel program has only limited statistical capability and may need to be supplemented by another program such as StatPlus or PhStat or Wizard.

7 COURSE SCHEDULE

Note: As the text/ reference book titles are long readings are shown either using:
HPW to denote Haeussler, Paul and Wood
TBKZ to denote Tannous, Brown, Kopp and Zima
SP to denote Swift and Pfiff
Ber to denote Berenson et al.

<table>
<thead>
<tr>
<th>Week</th>
<th>Date</th>
<th>Topic</th>
<th>Learning Objective</th>
<th>Textbook Reading</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>29 February/ 1 March</td>
<td>Introduction + Describing the problem</td>
<td>Learn how to represent a business problem in terms of graphical and functional relationships.</td>
<td>HPW 2.1-2.2, 2.5, 2.8, 3.1-3.3, 4.1-4.3</td>
</tr>
<tr>
<td>2</td>
<td>7/8 March</td>
<td>Possible answers</td>
<td>Learn to represent business problems in terms of equations, solve them and interpret solutions.</td>
<td>HPW 0.7-0.8, 1.1-1.3, 3.4, 3.6, 4.4</td>
</tr>
<tr>
<td>3</td>
<td>14/15 March</td>
<td>Valuing alternatives</td>
<td>Learn to value costs and benefits occurring at different times, evaluate rates of return on alternative projects and work with annuities.</td>
<td>HPW 5.1-5.4 TBKZ 1.3-3.3 and 7.1-7.2</td>
</tr>
<tr>
<td>Week</td>
<td>Dates</td>
<td>Topic</td>
<td>Description</td>
<td>Textbook References</td>
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<td>4</td>
<td>21/22 March</td>
<td>Calculating for loans and savings</td>
<td>Learn to calculate the payments required to repay a loan as interest rates change. See how savings payments are affected by rate changes.</td>
<td>HPW 5.4-5.6, TBKZ 3.4, 4.3 5.1-5.3</td>
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<td>Mid-semester break: Friday 25 March – Saturday 2 April inclusive</td>
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<td>5</td>
<td>4/5 April</td>
<td>Considering changes</td>
<td>Learn to use calculus to examine inter-relationships between factors that influence the business environment.</td>
<td>HPW Ch 11, 12.1-2.3,12.5, 17.1-17.3</td>
</tr>
<tr>
<td>6</td>
<td>11/12 April</td>
<td>The best solution</td>
<td>Learn how to use graphical and calculus techniques to solve optimisation problems.</td>
<td>HPW 12.7, 13.1-13.6, 7.1-7.3 SP pp.550-566</td>
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<td></td>
<td>Part 2 – Interpreting Business Data</td>
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<td></td>
<td></td>
<td>(Statistical topics)</td>
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<tr>
<td>7</td>
<td>18/19 April</td>
<td>Describing the data</td>
<td>Learn to present data in frequency tables and graphs and to calculate and interpret summary statistics.</td>
<td>Ber 2.1-2.6, 3.1-3.6 SP pp.537-539</td>
</tr>
<tr>
<td>8</td>
<td>26 April</td>
<td>Probability and expectation</td>
<td>Learn to describe business environments that involve uncertainty and risk.</td>
<td>Ber 4.1-5.3 + Table E6 HPW Ch8, 9.1-9.2</td>
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<td></td>
<td>(Monday 25 April is Anzac Day public holiday)</td>
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<tr>
<td>9</td>
<td>2/3 May</td>
<td>Evaluating parameters</td>
<td>Learn to calculate normal probabilities and use them to make statistical estimates with a given degree of confidence.</td>
<td>Ber 6.1-6.4, 7.1-7.3 + Table E2</td>
</tr>
<tr>
<td>10</td>
<td>9/10 May</td>
<td>More estimation + Testing hypotheses</td>
<td>Estimate with unknown variance. Learn to use statistical techniques to evaluate the likelihood of some statement about a financial or economic relationship being true</td>
<td>Ber 8.1-8.4, 9.1-9.5, 9.7 + Table E3</td>
</tr>
<tr>
<td>11</td>
<td>16/17 May</td>
<td>Estimating regression parameters</td>
<td>Learn to estimate unknown parameters in key financial and economic relationships using regression techniques.</td>
<td>Ber 12.1-12.5, 12.9</td>
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<tr>
<td>12</td>
<td>23/24 May</td>
<td>Forecasting the future</td>
<td>Learn the use of statistically based models to forecast the values of particular variables in an economic or financial relationship</td>
<td>Ber 12.7,13.1-13.4, 13.6, 14.1-14.4, 14.8-14.9 + Table E5</td>
</tr>
<tr>
<td>13</td>
<td>30/31 May</td>
<td>No Lectures but tutorials continue</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>