Australian School of Business

COMM5005
QUANTITATIVE METHODS FOR BUSINESS

COURSE OUTLINE
SESSION 1, 2008

COURSE WEBSITE
http://vista.elearning.unsw.edu.au
<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. COURSE STAFF</td>
<td>3</td>
</tr>
<tr>
<td>1.1 Communication with Staff</td>
<td>3</td>
</tr>
<tr>
<td>2. INFORMATION ABOUT THE COURSE</td>
<td>3</td>
</tr>
<tr>
<td>2.1 Teaching times and Locations</td>
<td>3</td>
</tr>
<tr>
<td>3. COURSE AIMS AND OUTCOMES</td>
<td>3</td>
</tr>
<tr>
<td>3.1 Course Aims</td>
<td>3</td>
</tr>
<tr>
<td>3.2 Approach to learning and teaching</td>
<td>3</td>
</tr>
<tr>
<td>3.3 Student Learning Outcomes</td>
<td>4</td>
</tr>
<tr>
<td>3.4 Teaching Strategies</td>
<td>4</td>
</tr>
<tr>
<td>4. CONTINUAL COURSE IMPROVEMENT</td>
<td>5</td>
</tr>
<tr>
<td>5. STUDENT RESPONSIBILITIES AND CONDUCT</td>
<td>5</td>
</tr>
<tr>
<td>5.1 Workload</td>
<td>5</td>
</tr>
<tr>
<td>5.2 Attendance</td>
<td>5</td>
</tr>
<tr>
<td>5.3 General Conduct and Behaviour</td>
<td>5</td>
</tr>
<tr>
<td>5.4 Keeping informed</td>
<td>5</td>
</tr>
<tr>
<td>6. LEARNING ASSESSMENT</td>
<td>6</td>
</tr>
<tr>
<td>6.2 Assessment Details</td>
<td>6</td>
</tr>
<tr>
<td>6.3 Online Quizzes</td>
<td>6</td>
</tr>
<tr>
<td>6.3 Assignments</td>
<td>7</td>
</tr>
<tr>
<td>6.4 Late Submission</td>
<td>7</td>
</tr>
<tr>
<td>6.5 Class Test and Final Exam</td>
<td>7</td>
</tr>
<tr>
<td>6.5 Special Consideration and Supplementary examinations</td>
<td>7</td>
</tr>
<tr>
<td>7. ACADEMIC HONESTY AND PLAGIARISM</td>
<td>8</td>
</tr>
<tr>
<td>8. STUDENT RESOURCES</td>
<td>9</td>
</tr>
<tr>
<td>8.1 Course Resources</td>
<td>9</td>
</tr>
<tr>
<td>8.2 Website</td>
<td>10</td>
</tr>
<tr>
<td>8.3 Calculator</td>
<td>10</td>
</tr>
<tr>
<td>8.4 Software</td>
<td>10</td>
</tr>
<tr>
<td>8.5 The Economics Pit Stop</td>
<td>10</td>
</tr>
<tr>
<td>8.6 Other Resources, Support and Information</td>
<td>10</td>
</tr>
<tr>
<td>9. COURSE SCHEDULE</td>
<td>11</td>
</tr>
</tbody>
</table>
1. **COURSE STAFF**  
The lecturer for this course is Judith Watson and the tutor is Phillia Restiani.

1.1 **Communication with Staff**  
Judith will be available on Tuesday 2.00-4.00 and Thursday 4.30-5.30 or by appointment for consultation. Her office is Quad 3126 which is located in the western wing, third floor of the Quadrangle building.

Judith’s phone number is 9385 3285.

Her email address is: [J.Watson@unsw.edu.au](mailto:J.Watson@unsw.edu.au)

Phillia’s email address is [p.restiani@student.unsw.edu.au](mailto:p.restiani@student.unsw.edu.au)

See also section 7.5 Economics Pit Stop for further information about consultations.

2. **INFORMATION ABOUT THE COURSE**

2.1 **Teaching times and Locations**  
You should attend a two hour lecture each week on Thursdays from 10.00 a.m. -12.00 noon or on Thursdays from 6.00-8.00 p.m.. You should also attend a one hour tutorial each week commencing in Week 1. For latest information about lecture and tutorial locations see: [http://www.timetable.unsw.edu.au/current/subjectSearch.html](http://www.timetable.unsw.edu.au/current/subjectSearch.html)

2.2 **Units of Credit**  
This course is worth six units of credit.

2.3 **Relationship of this course to other course offerings**  
This is a core course of the MCom program for students in specialisations where quantitative skills are required. In particular it is designed to ensure that students have the necessary mathematical and statistical skills to commence specialisations in the areas of Finance, Accounting and Business Strategy. The skills learned are also relevant for other MCom specialisations such as Marketing.

3. **COURSE AIMS AND OUTCOMES**

3.1 **Course Aims**  
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.

3.2 **Approach to learning and teaching**  
This course requires you to build quantitative skills and this can only be done through regular commitment. You will need to get involved in classes, evaluating information, asking and answering questions. You also 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. You will be expected to bring prepared problems to each tutorial and to discuss them with other students. It is anticipated that the lectures will be very interactive with plenty of
chances for questions to be asked and input given. You should be prepared to contribute.

In order to promote regular study engagement, the assessment has been modified this session and now has smaller but more frequent tasks. Recent research shows that, in a similar course, students who attempted all four online quizzes performed better in the final exam than those who missed some. Make sure you attempt every quiz.

The assignments in this course will test your ability to solve problems, use the Microsoft Excel program, and to think critically. Some knowledge of current events in business will certainly add to your understanding of the assignment material. You will also need to develop good calculator skills in order to perform well.

There will be little need for rote learning as the mid-session test and final exam will have an open-book format. Instead, the assessment will test your understanding of concepts, skills in applying formulae appropriately, solving problems and thinking critically.

3.3 Student Learning Outcomes
By the end of this course you should have developed
1. a good understanding of the basic mathematical and statistical techniques required for a postgraduate business degree
2. your capacity for analytical and critical thinking and for creative problem-solving
3. your ability to analyse business problems and to interpret output from analysis performed by yourself or others
4. your ability to engage in independent and reflective learning
5. effective skills in using a both a calculator and a spreadsheet program (Microsoft Excel) to perform calculations.
6. If you have previously studied mathematics and/or statistics in a foreign language, you should become more familiar with the relevant English terminology.

3.4 Teaching Strategies
The lectures are meant to provide information but also give you a chance to interact. Lecture slides will be made available on the course website prior to the lecture for you to print out and bring with you. During the lectures there will be opportunities for you to listen, add your own notes and the solutions to problems. However you will also be expected to be actively involved in answering and asking questions, group discussion and in solving additional problems.

In the tutorial you will be able to consolidate your understanding of concepts and discuss and check your answers for prepared problems. If you do not come prepared you will not only gain less from the tutorials but the class discussion will also be affected adversely.

You should bring a calculator to both the lecture and tutorial as you may be asked to solve extra problems.

In addition to formal classes you will need to regularly work on assigned problems, online quizzes and assignments in your own time and develop skills in using Excel. You have swipe card access to the postgraduate computing Quad Labs 1, 2, 4, 5, 6,
8 and 9 which you can use if you do not have access to your own computer. See http://wwwdocs.fce.unsw.edu.au/fce/Current/ITGuide2008.pdf for more details.

The course website will be a useful source of practice materials and feedback. Using these for self-assessment will help to keep you informed of your progress and can alert you to seek assistance when required.

You can also make use of consultation times to get individual help. It is most useful of you bring some work you have attempted so that any difficulties can be assessed.

4. CONTINUAL COURSE IMPROVEMENT

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 (http://www.ltu.unsw.edu.au/ref4-5-1_catei_process.cfm) is one of the ways in which student evaluative feedback is gathered. Most recently this has taken the form of an online survey towards the end of session. Feedback can lead to significant changes to courses and programs within the School which benefit subsequent cohorts of students. Changes to assessment in this course this session have been based on both CATEI feedback and extra research.

5. STUDENT RESPONSIBILITIES AND CONDUCT

5.1 Workload
It is expected that you will spend at least ten hours per week studying this course. This time should be made up of reading, research, working on exercises and problems, and attending classes. In periods where you need to complete assignments or prepare for quizzes or examinations, the workload may be greater.

Over-commitment has been a cause of failure for many students. You should take the required workload into account when planning how to balance study with employment and other activities.

5.2 Attendance
Your regular and punctual attendance at lectures and tutorials is expected in this course. University regulations indicate that if students attend less than eighty per cent of scheduled classes they may be refused final assessment.

5.3 General Conduct and Behaviour
You are expected to conduct yourself with consideration and respect for the needs of your fellow students and teaching staff. Conduct which unduly disrupts or interferes with a class, such as ringing or talking on mobile phones, is not acceptable and students may be asked to leave the class. More information on student conduct is available at: www.my.unsw.edu.au

5.4 Keeping informed
You should take note of all announcements made in lectures or on the course website. From time to time, the University will send important announcements to your university e-mail address without providing you with a paper copy. You will be deemed to have received this information.
6. LEARNING ASSESSMENT

6.1 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).

6.2 Assessment Details

The assessment in this course will consist of four online quizzes, two computer-based assignments, a mid-session class test and a final examination. The timing and weight of assessment components is shown below.

<table>
<thead>
<tr>
<th>Component</th>
<th>Dates</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>4 Online Quizzes</td>
<td>Weeks 3, 6, 9, and 11 see details below</td>
<td>5% each</td>
</tr>
<tr>
<td>Assignment 1</td>
<td>Question available: end of Week 2 Assignment due: in tutorial Week 5 (a late penalty will apply if not lodged by April 17)</td>
<td>10%</td>
</tr>
<tr>
<td>Mid-Session Test</td>
<td>One or two written problem questions based on topics from Lectures 1-6 During your normal tutorial time in week 7. Time allowed: 30 minutes.</td>
<td>10%</td>
</tr>
<tr>
<td>Assignment 2</td>
<td>Question available: end of Week 7 Assignment due: in tutorial Week 10 (a late penalty will apply if not lodged by May 22)</td>
<td>10%</td>
</tr>
<tr>
<td>Final Exam</td>
<td>Written problems on topics from Lectures 1-12 To be held in Exam period June 11 to June 27. Time allowed 2 hours.</td>
<td>50%</td>
</tr>
</tbody>
</table>

6.3 Online Quizzes

The online quizzes are designed to be used as learning tools as well as assessing your quantitative skills development. They will each be available for a one week period, beginning on Monday morning and finishing on Sunday night, so should easily be fitted into your work/study schedules. You will be allowed two attempts for each quiz and the higher of the two marks will be counted. Time allowed for each attempt is 30 minutes with a minimum of one hour between attempts.

You are encouraged to use the feedback from your first attempt to check the reasons for any mistakes. Though you will not be given exactly the same questions on your second attempt, further practice should be rewarding. Research in a similar course has shown that, after controlling for other factors, final examination
marks for the average student were approximately 11% higher when they had made an attempt on all four online quizzes than when they had not.

Quiz dates:
Week 3 – Monday March 31, 1.00 a.m. – Sunday April 6, 11.59 p.m.
Week 6 – Monday April 21, 1.00 a.m. – Sunday April 27, 11.59 p.m.
Week 9 – Monday May 12, 1.00 a.m. – Sunday May 18, 11.59 p.m.
Week 11 – Monday May 26, 1.00 a.m. – Sunday June 1, 11.59 p.m.

At present there is no service downtime planned for eLearning Vista on the above weeks but 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 $.

6.3 Assignments

The assignments will test your ability to use a spreadsheet to analyse a business problem and will require a clear explanation of the results you obtain. They will also require some critical analysis. Marks will be allocated on the basis of accuracy and of the quality of your interpretation and arguments.

Hard copies of assignments should be submitted to your tutor during your normal tutorials in Weeks 5 and 10. Where electronic submission is necessary, forward the files to your tutor’s email address with a cc to the lecturer’s (see page 3 above).

6.4 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 day, or a maximum ten marks, for late submission of assignments.

6.5 Class Test and Final Exam

The problem questions in the class test and final exam are designed to develop and test your analytical and problem-solving skills, which are attributes keenly sought in graduates. The questions will check both your ability to perform calculations using appropriate techniques and your ability to write explanations and demonstrate clear interpretations. Exams will be open-book, i.e. you may bring your textbook, lecture notes and course materials. In marking we will try not to penalise arithmetic errors more than once.

6.5 Special Consideration and Supplementary examinations

There will be no supplementary exam to replace the mid-session test. If a student is absent through illness or misadventure the final mark will be adjusted.
If your performance for any piece of assessment is adversely affected you should follow the information on the website 
https://my.unsw.edu.au/student/atoz/SpecialConsideration.html
This website outlines UNSW policy and the process for applying for Special Consideration, for example stating that:

- Applications for special consideration (including supplementary examinations) must go through UNSW Central administration (within 3 working days of the assessment to which it refers) – applications will not be accepted by teaching staff;
- Applying for special consideration does not automatically mean that you will be granted additional assessment or that you will be awarded an amended result;
- If you are making an application for special consideration (through UNSW Central Administration) please notify your Lecturer in Charge;
- Please note that a register of applications for Special Consideration is maintained. History of previous applications for Special Consideration is taken into account when considering each case.

7. ACADEMIC HONESTY AND PLAGIARISM

It is essential that you attempt the online quizzes without the assistance of others and that the work handed in for assignments is your own. The University regards plagiarism as a form of academic misconduct, and has very strict rules regarding plagiarism. For full information regarding policies, penalties and information to help you avoid plagiarism see: http://www.lc.unsw.edu.au/plagiarism/index.html

Plagiarism is the presentation of the thoughts or work of another as one's own.* Examples include:
- direct duplication of the thoughts or work of another, including by copying work, or knowingly permitting it to be copied. This includes copying material, ideas or concepts from a book, article, report or other written document (whether published or unpublished), composition, artwork, design, drawing, circuitry, computer program or software, web site, Internet, other electronic resource, or another person’s assignment without appropriate acknowledgement;
- paraphrasing another person's work with very minor changes keeping the meaning, form and/or progression of ideas of the original;
- piecing together sections of the work of others into a new whole;
- presenting an assessment item as independent work when it has been produced in whole or part in collusion with other people, for example, another student or a tutor; and,
- claiming credit for a proportion a work contributed to a group assessment item that is greater than that actually contributed.†

Submitting an assessment item that has already been submitted for academic credit elsewhere may also be considered plagiarism.

The inclusion of the thoughts or work of another with attribution appropriate to the academic discipline does not amount to plagiarism.
Students are reminded of their Rights and Responsibilities in respect of plagiarism, as set out in the University Undergraduate and Postgraduate Handbooks, and are encouraged to seek advice from academic staff whenever necessary to ensure they avoid plagiarism in all its forms.

The Learning Centre website is the central University online resource for staff and student information on plagiarism and academic honesty. It can be located at:

www.lc.unsw.edu.au/plagiarism

The Learning Centre also provides substantial educational written materials, workshops, and tutorials to aid students, for example, in:

- correct referencing practices;
- paraphrasing, summarising, essay writing, and time management;
- appropriate use of, and attribution for, a range of materials including text, images, formulae and concepts.

Individual assistance is available on request from The Learning Centre.

Students are also reminded that careful time management is an important part of study and one of the identified causes of plagiarism is poor time management. Students should allow sufficient time for research, drafting, and the proper referencing of sources in preparing all assessment items.

* Based on that proposed to the University of Newcastle by the St James Ethics Centre. Used with kind permission from the University of Newcastle

† Adapted with kind permission from the University of Melbourne.

8. STUDENT RESOURCES

8.1 Course Resources

The textbook for this course is


The textbook has a companion website at

http://www.palgrave.com/business/swift/students/index.htm

where an Excel primer and practice multiple choice questions are available.

Reference texts that are available in the my.courset reserve section of the library are:


8.2 Website
The course website can be accessed at http://vista.elearning.unsw.edu.au. Lecture notes will be made available there prior to each lecture. You should print these out and bring them to class so that extra material 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 and other useful information.

8.3 Calculator
A basic scientific calculator is required for this course. Usually the calculator you used at school will be satisfactory. 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. have a full alphabetic keyboard) or a financial one.

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.

8.4 Software
If you wish to complete the computing requirements of this course using your own computer rather than the university laboratories you will need to have the Microsoft Excel program installed. Make sure that you install the full version that enables add-ins to be used.

8.5 The Economics Pit Stop
The Economics Pit Stop is designed to provide convenient tutor assistance for students in the large courses, including COMM5005 which is taught by staff from the School of Economics. This means that instead of having to wait until your lecturer’s consultation time, you will be able to get help as soon as you run into a problem in your study.

The Pit Stop contact details are:
Location: Quadrangle Building Room 3113
Times: Monday-Friday (10am-6pm) from week 2
Phone (9385 1346) or email on tutcentre@unsw.edu.au.

Pit Stop tutors will give help over the phone or through email when they can, but will give priority to students who attend in person. A Pit Stop timetable will be posted on the Economics website before the start of Week 2.

8.6 Other Resources, Support and Information
The University and the Faculty provide a wide range of support services for students, including:

- Learning and study support
  - FCE Education Development Unit (http://education.fce.unsw.edu.au)
  - UNSW Learning Centre (http://www lc.unsw.edu.au)
  - EdTec – WebCT information (http://www.edtec.unsw.edu.au)
• Counselling support: http://www.counselling.unsw.edu.au

• Library training and support services: http://info.library.unsw.edu.au

• Disability Support Services – Those students who have a disability that requires some adjustment in their teaching or learning environment are encouraged to discuss their study needs with the Course Coordinator or the Equity Officer (http://www.studentequity.unsw.edu.au/disabil.html). Early notification is essential to enable any necessary adjustments to be made.

In addition, it is important that all students are familiar with University policies and procedures in relation to such issues as:

• Examination procedures and advice concerning illness or misadventure https://my.unsw.edu.au/student/academiclife/assessment/examinations/examinationrules.html

• Occupational Health and Safety policies and student responsibilities: https://my.unsw.edu.au/student/atoz/OccupationalHealth.html

9. COURSE SCHEDULE
Note: Readings from the textbook are shown using the initials of the section eg EM4 is Essential Maths Section 4. Readings from reference texts are using the initials of the authors eg HPW denotes Haeussler, Paul and Wood.

<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></td>
<td></td>
<td>Part 1: Making Business Decisions (Mathematical topics)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>Thur 13</td>
<td>Introduction +</td>
<td>Learn how to represent a business problem in terms of graphical and functional</td>
<td>EM4 pp 133-150</td>
</tr>
<tr>
<td></td>
<td>March</td>
<td>Describing the</td>
<td>relationships.</td>
<td>MM1.1 pp. 160-168</td>
</tr>
<tr>
<td></td>
<td></td>
<td>problem</td>
<td></td>
<td>MM2 pp. 188-219</td>
</tr>
<tr>
<td>2</td>
<td>Thur 20</td>
<td>Possible</td>
<td>Learn to represent business problems in terms of equations, solve them and</td>
<td>EM4 pp 150-158</td>
</tr>
<tr>
<td></td>
<td>March</td>
<td>answers</td>
<td>interpret solutions.</td>
<td>EM3 pp. 93-132</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>MM1 pp 168-187</td>
</tr>
<tr>
<td></td>
<td>March</td>
<td>Midsession break</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Thur 3</td>
<td>Valuing</td>
<td>Learn to value costs and benefits occurring at different times, evaluate rates of</td>
<td>BM4 pp 757-788</td>
</tr>
<tr>
<td></td>
<td>April</td>
<td>alternatives</td>
<td>return on alternative projects and work with annuities.</td>
<td>HPW pp 227-238</td>
</tr>
<tr>
<td>Day</td>
<td>Date</td>
<td>Topic</td>
<td>Description</td>
<td>References</td>
</tr>
<tr>
<td>-------</td>
<td>---------------</td>
<td>--------------------------------------------</td>
<td>-----------------------------------------------------------------------------</td>
<td>--------------------</td>
</tr>
<tr>
<td>4</td>
<td>Thur 10 April</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 pp238-242, KZB pp135-160</td>
</tr>
<tr>
<td>5</td>
<td>Thur 17 April</td>
<td>Considering changes</td>
<td>Learn to use calculus to examine inter-relationships between factors that influence the business environment.</td>
<td>MM3.1-3 pp.220-242</td>
</tr>
<tr>
<td>6</td>
<td>Thur 24 April</td>
<td>The best solution</td>
<td>Learn how to use graphical and calculus techniques to solve optimisation problems.</td>
<td>MM3.4 pp242-254, BM1 pp705-724</td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>Part 2 – Interpreting Business Data</strong></td>
<td><strong>(Statistical topics)</strong></td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>Thur 1 May</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>DD1 and DD2 pp.256-326, S3 564-574</td>
</tr>
<tr>
<td>8</td>
<td>Thur 8 May</td>
<td>Probability and expectation</td>
<td>Learn to describe business environments that involve uncertainty and risk.</td>
<td>P1, pp328-374, P2, pp375-415, P3 pp.426-440</td>
</tr>
<tr>
<td>9</td>
<td>Thur 15 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>P3 pp.449-471, S1 pp.483-516, S6 pp.674-5</td>
</tr>
<tr>
<td>10</td>
<td>Thur 22 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>S1 pp.516-524, S2 pp.526-562, S6 pp.676-678</td>
</tr>
<tr>
<td>11</td>
<td>Thur 29 May</td>
<td>Estimating regression parameters</td>
<td>Learn to estimate unknown parameters in key financial and economic relationships using regression techniques.</td>
<td>S3 pp.574-601</td>
</tr>
<tr>
<td>12</td>
<td>Thur 5 June</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>S3 pp.602-610, S4 pp.611-647</td>
</tr>
</tbody>
</table>