Contents

1 Subject Outline .................................................. 2
  1.1 Introduction .............................................. 2
  1.2 Subject Aims .............................................. 2
  1.3 Prerequisites ............................................. 2
  1.4 Subject Structure ......................................... 2
  1.5 Prescribed References .................................... 3

2 Academic Staff Contact Details .............................. 3

3 Lectures and Tutorials ........................................ 4
  3.1 Lecture Times ........................................... 4
  3.2 Lecture Participation Requirements ....................... 4
  3.3 Lecture Slides ........................................... 4
  3.4 Tutorial Times ........................................... 4
  3.5 Tutorial Participation Requirements ....................... 4
  3.6 Using Lecture Capture (Echo 360) ......................... 5

4 Lecture Topics & Reading Guide ............................. 5

5 Assessment ....................................................... 5
  5.1 Assessment Overview ..................................... 5
  5.2 Assignments (10% each) .................................. 5
  5.3 Late Submission of Assignments ........................... 6
  5.4 Using the Assignment Tool ............................... 6
  5.5 Referencing .............................................. 6
  5.6 Plagiarism, Collusion, and Other Forms of Cheating ......... 7
  5.7 Final Exam (70%) ......................................... 7
  5.8 Exam Policy ............................................. 7
  5.9 Calculators .............................................. 8
  5.10 Past Exams ............................................... 8

6 Further Assistance ............................................... 8
  6.1 Online Tutor ............................................. 8
  6.2 Tutor Consultations ....................................... 8
  6.3 The Administrative Coordinator ........................... 9
  6.4 FBE Centre for Excellence in Learning and Teaching ....... 9

7 Alternative Quantitative Requirements for the B.Comm. .... 9
1 Subject Outline

1.1 Introduction

Welcome to QM1.

This subject covers core concepts which underpin quantitative analysis in economics and commerce. It provides a foundation for second-year quantitative subjects, and prerequisite information for other subjects in a commerce degree. The topics covered are descriptive statistical measures, including location and dispersion and graphical methods; probability, random variables and expected values; sampling; estimation and testing using the normal and t-distribution; chi-squared tests of independence; simple regression and correlation; and index numbers. With time permitting, there will also be an introduction to time series analysis. Excel is used to illustrate applications in accounting, economics, finance, management and marketing.

1.2 Subject Aims

The subject aims are to teach students the basic quantitative methods used in modern organisations and to provide a foundation for future study in both econometrics and quantitative methods more broadly.

Students should be able to identify and apply suitable statistical techniques for describing data and making inferences from those data. Also, by studying the basic principles of estimation and hypothesis testing, they will acquire the foundation to study more advanced tools used for investigating relationships between important variables in economics, finance, accounting, marketing and management.

At a broader level, studying this subject will give you an appreciation of the analysis behind research conclusions that are reported in the media and in print, and the ability to critically evaluate those conclusions.

For a formal statement of the subject objectives and the generic skills you will develop through successful completion of this subject, please see:


To view the learning goals, generic skills and graduate attributes for your degree, please locate the entry for your degree at in the University Handbook:

http://handbook.unimelb.edu.au

1.3 Prerequisites

VCE Mathematical Methods (CAS), or equivalent. It is assumed that students have learned concepts of algebra, differential calculus, probability and probability distributions.

1.4 Subject Structure

Broadly speaking the subject will be concerned with three broad areas of study.

Data Reduction First, we will explore the use of statistical techniques for data reduction. Here the aim is to explore techniques that can be used to summarize data using statistics of smaller dimension than the original data set. Examples of the techniques considered include graphical methods, index numbers, and various other descriptive statistics.

Probability Second, we need to develop appropriate probabilistic tools to enable us to explore the final topic of statistical inference. We will explore various probability distributions together with notions of sampling.
Statistical Inference  Finally, statistical inference is concerned with learning about populations on the basis of sample data. It combines many of the ideas of the previous two topics. Here we will explore techniques of estimation and hypothesis testing for both conditional and unconditional models. Regression modelling will be an important application of these ideas.

1.5 Prescribed References


In subject material, the textbook will often be referred to as “SSK”. Note that:

- the sixth edition is the only one supported by the subject;
- some bookshops have the abridged edition; you need the full version (the one without ‘Abridged’ anywhere in its title).

Required readings will be provided with each lecture.

2 Academic Staff Contact Details

Lecturer Contact Details

Dr. Jonathan Thong  
Office 1: Room 609, FBE Building  
Office 2: Level 5, Spot Building (Please inquire at CELT reception)  
Email: jonathan.thong@unimelb.edu.au

Office Hours: By Appointment

Administrative Coordinator Contact Details

Dr Wasana Karunarathne  
Office: Room 335, FBE Building  
Tel: 8344 4866  
Email: lakminik@unimelb.edu.au

Office Hours: Monday 2pm–4pm

Tutor Contact Details

Please check the subject’s LMS page for consultation times and for tutor contact details.

Email Protocol

Please note that we are only able to respond to student emails coming from a University email address. Please do not use personal email addresses such as Yahoo, Hotmail or even business email addresses. Emails from non-University email addresses may be filtered by the University’s spam filter, which means that we may not receive your email. All correspondence relating to this subject will only be sent to your University email address. Note that you must first activate your University email address before you can send or receive emails at that address. You can activate your email account at this link:

http://accounts.unimelb.edu.au/
While academic staff endeavour to address queries received via email, it is more appropriate to resolve substantive questions during lectures and tutorials and during normal consultation hours. With this in mind, we encourage students to attend all lectures and tutorials and to familiarise themselves with the consultation hours offered by the lecturers and tutors in this subject.

3 Lectures and Tutorials

3.1 Lecture Times

<table>
<thead>
<tr>
<th>Stream</th>
<th>Monday</th>
<th>Wednesday</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>10:00am – 11:00am</td>
<td>10:00am – 11:00am</td>
</tr>
<tr>
<td>2</td>
<td>2:15pm – 3:15pm</td>
<td>2:15pm – 3:15pm</td>
</tr>
</tbody>
</table>

All lectures are held in the Copland Theatre in the basement of The Spot (198 Berkeley St). Lectures commence 5 minutes after the designated starting time. You are expected to be seated and quiet at that time. If for any reason you arrive late then please enter the lecture theatre causing as little disruption as possible.

3.2 Lecture Participation Requirements

You are expected to have completed the required reading for each topic before attending the lecture. See the subject’s LMS page for a list of required reading.

3.3 Lecture Slides

The lecture slides used during lectures will be available for download from the subject’s LMS page prior to each lecture.

3.4 Tutorial Times

After subject registration, students are allocated to available classes. It is a student’s responsibility to ensure their registrations produce a clash-free timetable. Until it closes on Friday 14 March at 5pm, students can make changes to their timetable by following the instructions provided in the Student Portal. Timetable and venue information for all University lectures and tutorials can be found via the university timetable at: https://sis.unimelb.edu.au/cgi-bin/subjects.pl. Please note you will only be able to change your allocated tutorial time if there is space in alternative tutorials. Late enrolment into tutorials is handled by the Commerce Student Centre. More information about the new Student Timetable system is available on the Faculty’s website:

http://fbe.unimelb.edu.au/csc/planning/timetables

Tutorials commence in Week 2 (the week commencing Monday, August 8), and each tutorial covers the content from lectures in the previous week.

3.5 Tutorial Participation Requirements

The most effective way to learn in this subject, and to get a good grade, is to work consistently and conscientiously throughout the semester. Tutorials and the prescribed homework related to them are designed to help you do this. It is particularly important to keep up with the tutorial work in this subject because, after the first few weeks, the content continues to build on early, relatively simple ideas to move quickly into quite complex theories and applications.
Each week, you will be provided with required readings that you are expected to complete before attending lectures, and with questions that you are expected to complete after attending the lecture and before attending your tutorial. The work you do in tutorials assumes and requires that you have completed these readings and the corresponding preparation. You should bring a calculator to tutorials.

Suggested solutions to tutorial questions will be placed on the LMS page after all tutorials for that week have been held.

3.6 Using Lecture Capture (Echo 360)

Audio recordings of the lectures will be made available for review in the days following the lecture. Audio recordings of lectures allow you to revise lectures during the semester, or to review lectures in preparation for the end of semester exam.

You can access recorded lectures by clicking on the Lecture Recordings (or similar) menu item in the LMS page for this subject.

Please note that lecture recordings are not a substitute for attendance; rather they’re designed for revision. On rare occasions the lecture capture system can fail to record the lecture due to technical reasons. In such cases, the lecture recording will not be made available.

4 Lecture Topics & Reading Guide

<table>
<thead>
<tr>
<th>Week</th>
<th>Topic</th>
<th>Relevant SSK Chapter</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Introduction, Data Visualisation</td>
<td>Chapter 3</td>
</tr>
<tr>
<td>2</td>
<td>Descriptive Statistics</td>
<td>Chapters 4, 5</td>
</tr>
<tr>
<td>3</td>
<td>Simple Linear Regression</td>
<td>Chapter 18</td>
</tr>
<tr>
<td>4</td>
<td>Probability Theory I</td>
<td>Chapters 6, 7</td>
</tr>
<tr>
<td>5</td>
<td>Probability Theory II</td>
<td>Chapters 7, 8</td>
</tr>
<tr>
<td>6</td>
<td>Inference</td>
<td>Chapters 9, 10</td>
</tr>
<tr>
<td>7</td>
<td>Hypothesis Testing I</td>
<td>Chapters 11, 12</td>
</tr>
<tr>
<td>8</td>
<td>Hypothesis Testing II</td>
<td>Chapters 13, 14</td>
</tr>
<tr>
<td>9</td>
<td>Linear Regression Models</td>
<td>Chapters 18, 19</td>
</tr>
<tr>
<td>10</td>
<td>BREAK</td>
<td></td>
</tr>
<tr>
<td>11</td>
<td>Nonlinear Models</td>
<td>Chapter 20</td>
</tr>
<tr>
<td>12</td>
<td>Time Series Analysis</td>
<td>Chapter 23</td>
</tr>
<tr>
<td>13</td>
<td>Review</td>
<td>See notes</td>
</tr>
</tbody>
</table>

5 Assessment

5.1 Assessment Overview

Your assessment for this subject comprises the following:

<table>
<thead>
<tr>
<th>Assessment Task</th>
<th>Individual or Group</th>
<th>Due</th>
<th>Weighting</th>
</tr>
</thead>
<tbody>
<tr>
<td>Assignment 1</td>
<td>Individual/group</td>
<td>Week 4</td>
<td>10%</td>
</tr>
<tr>
<td>Assignment 2</td>
<td>Individual/group</td>
<td>Week 7</td>
<td>10%</td>
</tr>
<tr>
<td>Assignment 3</td>
<td>Individual/group</td>
<td>Week 11</td>
<td>10%</td>
</tr>
<tr>
<td>End-of-semester exam</td>
<td>Individual</td>
<td>Examination period</td>
<td>70%</td>
</tr>
</tbody>
</table>

5.2 Assignments (10% each)

You are encouraged to work on the assignments in groups of up to but no more than four students and to submit a single electronic copy as a group. All members of a group submitting
a single assignment must belong to the same tutorial and all members of the group will be given the same mark. Students may choose to work and hand in an assignment on their own if they wish.

It is possible that due dates for one or more of the assignments will also be due dates for work in another subject or subjects. Be mindful of this. The assignment questions will be made available 14 days in advance of the due date.

Assignments are to be submitted electronically via the Assignment Tool online (not via email).

Submissions should be in .pdf format, and must have the name and student number of all students (if working in a group) on the first page.

Solutions to each assignment will be made available on the LMS the day after they are due to provide students with feedback as soon as possible.

5.3 Late Submission of Assignments

Late assignments will not be marked. Students with a genuine and acceptable reason for not completing an assignment, such as illness, can apply to the subject’s Administrative Coordinator, Wasana Karumarathne (lakminik@unimelb.edu.au), to have their marks for that task transferred to the final exam. Suitable evidence, such as a doctor’s certificate is required. Applications made more than 3 days after the assignment is due will not be considered. Tutors do not have the authority to accept late submissions. Moreover, the Commerce Student Centre is not authorised to grant extensions for assignments in this subject and so they should not be approached for one.

5.4 Using the Assignment Tool

The Assignment Tool allows you to submit your assignment to your lecturer online from home or from any of the student labs on campus.

During the course of the semester, you’ll be asked to submit three assignments in electronic format into the Assignment Tool. You can access the Assignment Tool by clicking on Assignment Tool in the navigation menu from the LMS page for this subject.

A student guide has been prepared on the use of the Assignment Tool. The guide provides instructions on how to submit assignments in hard-copy format. The guide can be downloaded here:


Please note that you are required to keep a copy of your assignment after it has been submitted, as you must be able to produce a copy of your assignment at the request of your tutor or lecturer at any time after the submission due date.

5.5 Referencing

All sources used for a written piece of assessment must be referenced. This is to acknowledge that your material is not based entirely on your own ideas, but is based, in part, on the ideas, information, and evidence of others. This is desirable as you are attending University in order to learn from others.

You will be required to use the APA system or Harvard System of referencing. The FBE Centre for Excellence in Learning and Teaching (CELT) has prepared a booklet for each system specifically to assist students to reference correctly. Each booklet contains many examples that will help you when preparing your assignments. The booklets can be found at the following locations:
It is important that all material you present for assessment is referenced correctly. Material that has not been referenced correctly may be considered to be plagiarised, and as such may be penalised. We will also look for evidence that material included in the bibliography has been used in the assignment. Including references that have not been used may also result in your assignment being penalised.

5.6 Plagiarism, Collusion, and Other Forms of Cheating

Presenting material from other sources without full acknowledgement (referred to as plagiarism) is heavily penalised. Penalties for plagiarism can include a mark of zero for the piece of assessment or a fail grade for the subject.

Plagiarism is the presentation by a student of an assignment identified as his or her own work even though it has been copied in whole or in part from another student’s work, or from any other source (e.g. published books, web-based materials or periodicals), without due acknowledgement in the text.

Collusion is the presentation by a student of an assignment as his or her own work when it is, in fact, the result (in whole or in part) of unauthorised collaboration with another person or persons. Both the student presenting the assignment and the student(s) willingly supplying unauthorised material are considered participants in the act of academic misconduct.

More broadly, academic integrity is the value that the University of Melbourne values over all others. The penalties for all forms of cheating can, and sadly sometimes do, extend as far as expulsion from the University. Cheating almost always arises as an error of judgement made in a moment of stress. If you find yourself in such a situation just remember that the consequences of being caught cheating far outweigh any potential benefits, so please do not make that mistake.


5.7 Final Exam (70%)

The final exam accounts for 70 marks. Failure to achieve a mark of at least 35/70 on this exam will mean that the maximum attainable mark you can receive for the subject will be a pass mark of 50 with a grade of P.

All topics are examinable and there will be little covered in tutorials and assignments which will not be examined.

You will not be examined on what formulas or commands to use in Excel, but you may be examined on the interpretation of output generated in Excel.

5.8 Exam Policy

The Faculty requires that you are available for the entire examination period. Supplementary exams will not be provided in cases of absence during the examination period, unless the absence is due to serious illness or other serious circumstances. See the Special Consideration web-site for more information:

http://fbe.unimelb.edu.au/csc/assistance/special_consideration

The examination period for this semester is Monday 4 November to Friday 22 November.
5.9 Calculators
You will need a calculator for the final exam. It is strongly recommended that you use the
calculator you intend to use in the final exam throughout the semester.

5.10 Past Exams
Many students like to look at past exams for a subject as part of their revision process. Recent
past exams in this subject are not available from the Library. Some will be made available
nearer the end of the semester. An announcement will be made when past exams are available
on the LMS.

I will make three observations about past exams. First, subjects evolve and so past exams
are not always a great indicator of what might appear on your exam. Second, past exams
are never something that you should dip into. For them to be of any real use that should be
completed under exam conditions: no distractions, adhering strictly to the time limits. Finally,
there is only one exam that you need to be able to do well and that is the exam that you will
sit yourself. It is a common trap that students often fall into. There is little point in training
to do well in someone else's exam. Make sure you are on top of the material that you did this
semester.

6 Further Assistance
If you need assistance during the semester, you have several options:

6.1 Online Tutor
The Online Tutor allows you to direct questions to a tutor via the LMS. It can be accessed 24
hours a day, 7 days a week. The Online Tutor will attempt to answer your question within 24
hours (weekdays only).

To ensure that all students have a fair and equal opportunity to have their questions an-
swered, questions relating to assessment (e.g. assignments and the final exam) submitted less
than 24 hours before the assessment deadline will not be answered.

Your questions and the answers can (usually) be accessed by all students in the subject,
allowing everyone to benefit from the question and answer. Importantly, your identity will not
be revealed to other students. Notice that this means, that even if you don’t want to ask a
question, you can still view existing questions and answers.

Note that the Online Tutor is not designed to replace attendance at tutorials or your own
reading and preparation, but rather to complement these. If questions can be answered by
referring to the prescribed readings then this will typically be the response. Please also note
that detailed answers for assignments will not be provided by the Online Tutor. Solutions to
assignments are provided elsewhere. If you do not understand concepts generally then please
see your tutor during their consultation hours.

Finally, the Online Tutor will not answer duplicate questions. Please view existing questions
and answers before posting a new question.

6.2 Tutor Consultations
All tutors will have a consultation hour available each week beginning in Week 3 of semester.
Details will be placed on the LMS when they are available.
6.3 The Administrative Coordinator

For problems with general administration of the subject and with tutorials in particular, you should consult the subject’s Administrative Coordinator, Dr Wasana Karunarathne (contact details are on page 2 above).

6.4 FBE Centre for Excellence in Learning and Teaching

The FBE Centre for Excellence in Learning and Teaching (CELT) provides services and resources to enhance your learning in Business and Economics.

Maximise your academic success by taking part in CELT services that develop:

- Skills in research, referencing and academic writing
- Mastery of different assignment types
- Effective study techniques
- Abilities to learn effectively with your peers
- Transition to the faculty and understanding of academic expectations

The Centre also provides an extensive range of help-sheets that can enhance your academic performance in Business and Economics. These are available online or at the Centre.

Visit the CELT site fbe.unimelb.edu.au/celt to learn more and get involved.

7 Alternative Quantitative Requirements for the B.Comm.

There is an alternative set of subjects for satisfying the quantitative requirement for your commerce degree, which involve studying maths as your breadth component. See the details in the ‘Subject Information’ section of the subject’s LMS page for more details.