

ECON10005

Quantitative Methods 1

Subject Guide

2023 Semester 1

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Department of Economics

Faculty of Business and Economics



General Subject Information

Subject Name and Code

- **Subject Name & Code:** Quantitative Methods 1, ECON10005
- **Subject Level:** Undergraduate Level 1
- **Credit Points:** 12.5
- **Availability:** On Campus (Parkville), On Campus (Parkville)
- **Year:** 2023

Welcome

Welcome to Quantitative Methods 1. I'm Yong Song, the subject coordinator for this course, and I'm thrilled to have you in my classroom.

QM1 is an essential subject for first-year Commerce students. The course is designed to equip you with the mathematical and statistical skills necessary for success in a wide range of commerce disciplines.

Statistics and econometrics can be thought of as a new language, and QM1 is like learning the letters and words of this language. Throughout the semester, you will learn about essential techniques such as descriptive statistics, basic probability theory, hypothesis testing, and simple linear regression analysis. These skills are important not only for success in your commerce studies but also in your future careers.

Just like learning any new language takes time and practice, mastering the concepts and techniques in this course will also require hard work and dedication. But I promise you that with effort, you will be able to speak this new language fluently. I will be here to support you every step of the way, and I am confident that you will all do great.

I'm looking forward to a fantastic semester, and I can't wait to see the progress that you will make as you learn this new language.

Overview

This subject covers the core concepts which underpin quantitative decision analysis in the various specialisations within the faculty. It provides a foundation for all second-year quantitative subjects in the commerce degree. The topics covered are drawn from financial mathematics; measures of location and dispersion; probability, random variables and expected values; sampling design; estimation and testing using the normal and t-distribution; and simple regression and correlation. Excel is

used to illustrate applications in accounting, economics, finance, management and marketing.

Intended Learning Outcomes

- Graph economic data using methods that facilitate analysis.
- Explain concepts relevant for summarising and interpreting data.
- Explain how the concepts of random variables and probability distributions are useful for drawing inferences.
- Explain the concepts of population, samples and sampling distributions.
- Estimate unknown population quantities and test hypotheses about them.
- Conduct simple regression analysis to model the relationship between variables and draw inferences about relationships.
- Apply common analytical techniques relevant for financial decision making.

Generic Skills

On successful completion of this subject, students should have improved the following generic skills:

- High level of development: problem solving; statistical reasoning; application of theory to practice; interpretation and analysis; synthesis of data and other information; evaluation of data and other information; use of computer software; accessing data and other information from a range of sources.
- Moderate level of development: oral communication; written communication; critical thinking; receptiveness to alternative ideas.
- Some level of development: collaborative learning; team work.

Eligibility and Requirements

To view the eligibility and requirements, including prerequisites, corequisites, recommended background knowledge and core participation requirements for this subject, please see the University Handbook:

<https://handbook.unimelb.edu.au/2023/subjects/ECON10005/eligibility-and-requirements>

Strategies for Learning and Teaching with this Subject

Quantitative Methods 1 has been designed to provide a solid foundation for all first-year Commerce students at the University of Melbourne. The course covers critical statistical techniques such as descriptive statistics, basic probability theory, hypothesis testing, and simple linear regression analysis, which are crucial for success in a wide range of commerce disciplines. The coverage of these techniques has been carefully selected to ensure that students receive a comprehensive understanding of the fundamental concepts of statistics and data analysis. Additionally, the inclusion of exercises and practical examples helps students to apply the concepts they have learned, strengthening their understanding and preparing them for more advanced quantitative courses in the future.

Academic Staff Contact Details

Please see the subject LMS for full contact details of the teaching staff in this subject.

Subject Coordinator(s)

Name	Email
Yong Song	yong.song@unimelb.edu.au

Bio

I am an econometrician with a PhD degree from the University of Toronto. My research focus is on Bayesian econometrics, financial econometrics, and empirical macroeconomics. I have a working knowledge of various fields of economics and finance, and my skills in probability modelling are helpful for real-world applications.

Head Tutor, Tutorial Coordinator

Your tutorial coordinator is Chin Yong Quek, who can be reached at qm1-economics@unimelb.edu.au. Any tutorial/admin-related issues shall be addressed to Chin.

Tutors

QM1 is a large subject, so we have many tutors. The updated list of tutors can be found in Canvas.

Consultation Procedures

You have multiple channels for consultation.

1. Talk to your tutor before/during/after the tutorial if convenient with their consent.
2. Post your questions on the online Discussion board (Ed) at any time.
3. I offer in-person consultation. Time to be advised on Canvas.
4. Additional consultation is available such as before exams and assignment due days depending on demand, and would be advised on Canvas in due time.

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. 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/or through any online discussion forum set up for the course, or during normal consultation hours. With this in mind, we encourage students to attend all lectures and tutorials and to familiarise themselves with any consultation hours offered by **lecturers and tutors** in this subject.

Subject Resources

Prescribed Resources

There is no required textbook. I will provide readings based on a working book by Professor David Harris with additional notes from myself.

Subject Structure

Lecture Times

Please refer to your timetable for more details.

Lecture Participation Requirements

Attendance is not mandatory for lectures, however, all lectures are automatically recorded for your future reference. In the event of a technical issue, providing a makeup video may not be possible.

Schedule

Days	Week beginning	Topic	Related Reading	Other Activities
1 and 3 March	27/02/2023	Introduction and Descriptive Statistics	Post on Canvas	
8 and 10 March	06/03/2023	Probability	Post on Canvas	
15 and 17 March	13/03/2023	Random Variable	Post on Canvas	
22 and 24 March	20/03/2023	Conditional Distribution	Post on Canvas	
29 and 31 March	27/03/2023	Continuous Random Variable	Post on Canvas	First Mid-Semester Examination
5 and 7 April	03/04/2023	Statistical Inference	Post on Canvas	Assignment first draft due
19 and 21 April	17/04/2023	Test One Mean	Post on Canvas	
26 and 28 April	24/04/2023	Testing Error and Confidence Interval	Post on Canvas	
3 and 5 May	01/05/2023	Compare Two Means	Post on Canvas	Second Mid-Semester Examination
10 and 12 May	08/05/2023	Regression 1	Post on	

			Canvas	
17 and 19 May	15/05/2023	Regression 2	Post on Canvas	Assignment final draft due
24 and 26 May	22/05/2023	Review	Post on Canvas	

You should work on the pre-quiz questions each week and complete the online quiz before attending your tutorial.

My Timetable

MyTimetable is a class timetabling system that assists students in the creation of their individual timetable. This is done using a combination of student preference submissions and the provision of alternative options available where preferences cannot be fulfilled.

You will use this system to create your class timetable prior to each study period and you will have the opportunity to "self-register" into suitable classes with availability or seek assistance via a Timetable Assistance request form. Further information is available at: <https://students.unimelb.edu.au/admin/class-timetable>.

Recorded Lectures

Audio and video recordings of lectures delivered in this subject will be made available for review. These recordings allow you to revise lectures during the semester, or to review them in preparation for the end of semester exam.

Recordings are not a substitute for attendance; rather they are designed for revision. On rare occasions, the recordings can fail to take place due to technical reasons. In such cases, a substitute recording will be made available if possible.

Tutorial Times

Please refer to your timetable.

Tutorial Participation Requirements

Students are expected to:

1. complete the pre-quiz questions, then
2. complete the online quiz, then
3. attend the tutorial with your tutorial questions,
4. actively work during the tutorial and engage in tutorial discussion.

Tutorial Exercises

Each week's tutorial questions/materials aim to help students review the previous week's lecture. The questions will be posted on Canvas in due time.

Private Tutoring Services

The Faculty has become increasingly concerned about the existence of a number of private tutoring services operating in Melbourne that heavily target University of Melbourne students enrolled in FBE subjects.

Students are urged to show caution and exercise their judgement if they are considering using any of these services, and to please take note of the following:

- Any claim by any of these businesses that they have a “special” or “collaborative” or “partnership” style relationship with the University or Faculty is false and misleading.
- Any claim by a private tutoring service that they are in possession of, or can supply you with, forthcoming University exam or assignment questions or “insider” or “exclusive” information is also false and misleading.

The University has no relationship whatsoever with any of these services and takes these claims very seriously as they threaten to damage the University's reputation and undermine its independence.

It is also not appropriate for students to provide course materials (including University curricula, reading materials, exam and assignment questions and answers) to operators of these businesses for the purposes of allowing them to conduct commercial tutoring activities. Doing so may amount to misconduct and will be taken seriously. Those materials contain intellectual property owned or controlled by the University.

We encourage you to bring to the attention of Faculty staff any behaviour or activity that is not aligned with University expectations or policy as outlined above.

Assessment Information

Assessment Overview

Your assessment for this subject comprises the following:

Assessment Task	Individual or Group	Weighting
Mid-semester test 1 45 Minutes	individual	10%
Mid-semester test 2	individual	10%

45 Minutes		
Quantitative Data Analysis Report - not to exceed 8 pages including graphs, charts and equations, draft due in Week 6 1000 Words	group	10%
Weekly online quiz and tutorial attendance	individual	10%
End-of-semester examination 2 Hours Hurdle requirement: To pass this subject, students must pass the end of semester examination.	individual	60%

Assessment Details

Assessment 1

Name: Mid-semester test 1

Value: 10%

Group or Individual: Individual

Due Date: Ongoing (see details below)

1. Instructions:

You will be advised on the time and venue of the exam in due time.

2. Presentation format:

Paper-based exam.

3. How to submit:

Submit exam papers at the exam venue.

Assessment 2

Name: Mid-semester test 2

Value: 10%

Group or Individual: Individual

Due Date: Ongoing (see details below)

1. Instructions:

You will be advised on the time and venue of the exam in due time.

2. Presentation format:

Paper-based exam.

3. How to submit:

Submit exam papers at the exam venue.

Assessment 3

Name: Quantitative Data Analysis Report - not to exceed 8 pages including graphs, charts and equations, draft due in Week 6

Value: 10%

Group or Individual: Group

Due Date: Ongoing (see details below)

1. Instructions:

You will receive sufficient information throughout the course. More details shall be posted on Canvas.

2. Presentation format:

The data analysis report can be viewed as a short essay with data support. More details shall be posted on Canvas.

3. How to submit:

This assignment should be submitted twice: the first and final draft. Both drafts should be submitted online.

Assessment 4

Name: Weekly online quiz and tutorial attendance

Value: 10%

Group or Individual: Individual

Due Date: Ongoing (see details below)

1. Instructions:

More details shall be posted on Canvas.

2. Presentation format:

Online quiz and tutorial participation/engagement.

3. How to submit:

Online and in-person.

Assessment 5

Name: End-of-semester examination

Value: 60%

Group or Individual: Individual

Due Date: Exam period (time and date to be advised)

2. Presentation format:

Paper-based exam.

3. How to submit:

You should submit your exam papers in the exam venue.

Assignment Submission

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 teaching staff at any time after the submission due date.

Submission of Late Assignments

Special Consideration assists students who have been significantly affected by illness or other serious circumstances during the semester. The following website contains detailed information relating to who can apply for Special Consideration and the process for making an application:

<http://students.unimelb.edu.au/admin/special>

Assignment Extension

Notice that the assignment (data analysis report) has a shorter extension date because of short marking deadlines.

Requests for an assignment extension should be submitted here:

<http://go.unimelb.edu.au/yh9n>.

Before completing this form, please read the Extensions to assessment due dates of up to 10 business days (sections 4.119 – 4.122), which can be found at:

<https://policy.unimelb.edu.au/MPF1326#section-4.31>

Please note: Extensions are not possible for exams, online tests, quizzes or mid semester tests. Please apply for Special Consideration for these types of assessments. For more information about assignment extensions, see:

<https://fbe.unimelb.edu.au/students/bcom/current-students/assessment>

Academic Integrity

Academic Honesty

The University maintains high academic standards in its courses and subjects and expects students to conduct themselves in a manner which is fair, honest and consistent with the principles of academic integrity, particularly when undertaking assessment and research.

Plagiarism and Collusion

Plagiarism (failure to cite your sources correctly and completely) and collusion (unauthorised collaboration with another person to prepare an assessment task) are considered academic misconduct and attract severe penalties. More information is available on the University's Academic Integrity website via

<http://go.unimelb.edu.au/rha6>.

Referencing

Each source 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.

You will be required to use the APA system or Harvard System of referencing. The library has prepared a website to help students correctly reference: <http://www.library.unimelb.edu.au/recipe>

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.

Further referencing resources:

Academic Skills Unit:

https://services.unimelb.edu.au/academicskills/undergrads/top_resources

Library: <http://www.library.unimelb.edu.au/>

Policy

Alternative Exam Arrangements (AEA)

Alternative Exam Arrangements (AEAs) are study adjustments granted to students who require changes to the scheduled conditions or format of an exam. For an overview of AEAs, visit:

<https://students.unimelb.edu.au/your-course/manage-your-course/exams-assessments-and-results/exams/alternative-exam-arrangements>

Assessment and Results Policy

The University's assessment policy provides a framework for the design, delivery and implementation of assessment of students in award and non-award courses and subjects. Assessment is designed to contribute to high quality learning by students, and to allow for quality assurance and the maintenance of high academic standards. *The University of Melbourne Assessment and Results Policy* can be found here:

<https://policy.unimelb.edu.au/MPF1326/>

Exam Policy

The University requires that you are available for the entire examination period. Please see the University's Principal Dates via <https://www.unimelb.edu.au/dates> for the full annual calendar. 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 and a Special Consideration application is submitted and approved.

Information on Calculators in Examinations

Effective from 1 January 2017, the approved calculator for all subjects is the Casio FX82 (any suffix). No equivalent models of calculators will be permitted in exams. You are required to purchase your own calculator and are responsible for ensuring your calculator is in good working order with fresh batteries.

Special Consideration

As a student, you may experience extraordinary or unusual circumstances, or ongoing circumstances that adversely affect your academic performance. The University has policies in place to support students who are experiencing academic disadvantage. For more information, visit <http://students.unimelb.edu.au/admin/special>.

University Services

Stop 1: Connecting students and services

Stop 1 is here to provide you with a range of support services throughout your university degree, from help with enrolment, administration and wellbeing to advice on building your skills and experiences.
(source: stop1 website)

Service Finder

The University of Melbourne offers one of the most comprehensive student support networks in Australia. Use this site to locate a wide range of services.
<https://services.unimelb.edu.au/finder>

Academic Skills

Academic Skills offers a range of workshops and resources to help you with study skills including researching, writing and referencing, presentation skills and preparing for exams. Visit their website via <http://services.unimelb.edu.au/academicskills>.

Student Counselling

Students attend counselling to talk about personal, emotional, or mental health issues which might be affecting their study and life. The University's Counselling and Psychological Services (CAPS) provides free, confidential, short-term professional counselling to currently enrolled students and staff.

Student Equity and Disability Support

Student Equity and Disability Support provides services for students who need ongoing support with their studies. They understand that adjustments to learning and assessment are sometimes required to allow all students to reach their full potential. Learn more about the services provided, how to find support and how to register for assistance.

UoM Library Services

As well as holding an extensive collection of books, ebooks, digital media and periodicals, library staff provide research guidance and support for students. <http://library.unimelb.edu.au/>

These Business and Economics Library Guides have been designed specifically for Faculty of Business and Economics staff and students. http://unimelb.libguides.com/sb.php?subject_id=80310