ECON1031

Quantitative Methods in Economics, Business and Finance

Session 1, Weekday attendance, North Ryde 2020

Department of Economics

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General Information

Unit convenor and teaching staff Unit convener Fazeel Mohamed Jaleel fazeel.jaleel@mq.edu.au Contact via fazeel.jaleel@mq.edu.au E4A 452 TBA
Credit points 10
Prerequisites
Corequisites
Co-badged status
Unit description This unit is highly recommended for all students. Its objective is to help students formulate and analyse problems in business, economics and finance using the power of logical thinking and mathematics. The unit is multi-disciplinary and develops literacy in the quantitative techniques commonly used for planning, resource allocation, the solution of macroeconomic models, optimal production and pricing problems, and portfolio selection. The topics covered include: functions of several variables; calculus of single-variable and multiple-variable functions; optimisation; and matrix algebra.

Important Academic Dates

Information about important academic dates including deadlines for withdrawing from units are available at https://www.mq.edu.au/study/calendar-of-dates

Learning Outcomes

On successful completion of this unit, you will be able to:

ULO1: Identify and describe the role of mathematics within economics, business and finance.

ULO2: Identify and practice the mathematical skill required to work with mathematical models in economics, business, finance and the economics of sustainability issues.

ULO3: Effectively communicate quantitative analysis and relevant associated information.

Assessment Tasks

Coronavirus (COVID-19) Update

Assessment details are no longer provided here as a result of changes due to the Coronavirus (COVID-19) pandemic.

Students should consult iLearn for revised unit information.

Find out more about the Coronavirus (COVID-19) and potential impacts on staff and students

General Assessment Information

Tutorial Quizzes to be held DURING the tutorials in weeks 4, 6, 8, 10 and 13 of the semester.

Weighting: 7% each (Total 35%)

The tutorial quizzes must be attempted in weeks 4,6,8,10 and 13 during your registered tutorial time. The quizzes are 25 minutes and will be held during the second half of your tutorial.

Students who do not submit this task during their assigned tutorial time receive a mark of zero. This penalty does not apply when an application for Special Consideration has been made and approved. Note: applications for Special Consideration Policy must be made within 5 (five) business days of the due date and time. In these circumstances, the student may wish to consult the University's Special Consideration policy.

Assignment: Due in week 13 Monday 4pm.

Weighting: 25%

Students will be given one assignment worth 25% of the final grade. It is intended that students will work on the assignment independently. Students who have plagiarised will be awarded a mark of zero, will not be permitted to resubmit, and may be reported to the University Disciplinary Committee for further action.

Assignment submission instructions will be posted on iLearn in a clearly labelled folder, titled: "Assignment".

Students who do not submit an assignment will be awarded a mark of zero for that assessment.

Late submission: No extensions will be granted. There will be a deduction of 10% of the total available marks made from the total awarded mark for each 24 hour period or part thereof that the submission is late (for example, 25 hours late in submission incurs a 20% penalty). Late submissions will be accepted up to 96 hours after the due date and time. This penalty does not apply for cases in which an application for Special Consideration is made and approved. Note: applications for Special Consideration must be made within 5 (five) business days of the due date and time.

Final Exam: University Examination Period Weighting: 40%

The final examination is of 2 hours duration and will be held in the official Macquarie University examination period. All students must attend the examination at the time and place designated in the University Examination Timetable. Details of the structure of the final examination will be provided when available during the semester.

Students who do not attend the final examination will be awarded a grade of FA (Failed Absent). The only exceptions to this are cases in which the University grants the student Special Consideration. In such cases, the affected student will be required to sit a supplementary examination at the place and time nominated by the University.

Delivery and Resources

Coronavirus (COVID-19) Update

Any references to on-campus delivery below may no longer be relevant due to COVID-19.

Please check here for updated delivery information: https://ask.mq.edu.au/account/pub/display/unit_status

Classes

Weekly classes in ECON1031 are composed of a two hour lecture and a one hour tutorial. The timetable can be viewed at https://timetables.mq.edu.au/2019. All students attend the same lecture stream.

There are a number of tutorial classes, and you must register via e-Student and physically attend the same class for all the tutorials. Tutorial classes are **not interchangeable**. Although the same content is covered in each class, the tutor may cover the material at a different pace, and in a slightly different way, in each class. Your class registration is complete (and correct) once you have registered for ALL activities, and have registered for the SAME class for all tutorials.

Tutorials

A tutorial consists of TWO distinct components:

- **Tutorial questions:** before each tutorial a selection of questions will be posted on the unit iLearn page. These are to be attempted before your tutorial. Your tutor will work through these problems with you during your designated tutorial time.
- **Tutorial quizzes:** Please refer to the section on "Assessment Tasks" for the precise detail of the unit's assessment components and weights.

Required and Recommended Texts and/or Materials

The required and recommended text for ECON1031 is Essential Mathematics for Economics and Business, 4 Ed., by Teresa Bradley.

Additional recommended reading material will be provided during the semester.

Technology Used and Required

Unit Web Page

iLearn is an online program available at https://ilearn.mq.edu.au/login/MQ/ through which students will be able to access resources to assist them throughout the semester.

WileyPLUS

One of the electronic versions of the required text, Essential Mathematics for Economics and Business, 4 Ed., by Teresa Bradley, comes with access to the WileyPLUS website, see here http://www.wileydirect.com.au/buy/essential-mathematics-for-economics-and-business-4th-edition/ On this web site students will be able to develop their own study plan.

Spreadsheet

The use of a spreadsheet will often be helpful for tasks in this unit. For students who don't own or wish to use Microsoft Excel, a free alternative is provided by OpenOffice (http://www.openoffice.org).

Unit Schedule

Coronavirus (COVID-19) Update

The unit schedule/topics and any references to on-campus delivery below may no longer be relevant due to COVID-19. Please consult iLearn for latest details, and check here for updated delivery information: https://ask.mq.edu.au/account/pub/display/unit_status

Week 1	Basic Concepts in Mathematical Economics, Chapters 1 & 2	Tutorial 1
Week 2	Simultanous Linear Equations and Quadratic Functions, Chapter 3 & 4	Tutorial 2
Week 3	Exponentiation, Logarithms, Non-linear Growth Models, Chapter 4	Tutorial 3
Week 4	Financial Mathematics I: Compound Interest, Continuous Compounding, Annuities, Chapter 5	Tutorial 4: **Tutorial Quiz 1**
Week 5	Financial Mathematics II: Perpetuity, NPV, IRR, Chapter 5 Differentiation I: Secant Line, Tangent Line, First Derivative, Increasing and Decreasing Functions - Chapter 6	Tutorial 5
Week 6	Differentiation II: Second Derivative, Chain Rule, Chapter 6 Optimizing Total Revenue and Profit, Elasticity of Demand	Tutorial 6: **Tutorial Quiz 2**

Week 7	Differentiation III: Derivatives of Exponential and Logarithmic Funct's, Limits, Chapter 6 Multivariable Calculus: Functions of Many Variables, Partial Differentiation, Chapter 7	Tutorial 7
Week 8	Partial Derivatives Cont'd, Total Derivative, Small Increment Formula, Differential, Chapter 7	Tutorial 8: **Tutorial Quiz 3**
Week 9	Indifference Curves, Implicit Differentiation, Utility Maximization Chapter 7 Integration, Integration by Substitution, Areas and Definite Integrals, Consumer and Producer Surpluses Chapter 8	Tutorial 9
Week 10	Differential Equations, Marginal Revenue and Marginal Cost, Differential Equations and Rates of Change, Limited Growth, Constant Proportional Rate of Growth, Chapter 8	Tutorial 10: **Tutorial Quiz 4**
Week 11	Probability and Random Variables, Probability Density Functions, Cumulative Distribution Functions as Integrals. Lecture Notes	Tutorial 11
Week 12	Expected Value and Median as Integration Problems, Variance. Lecture Notes	Tutorial 12
Week 13	Multiple Random Variables: Double Integral, Joint Density Functions, Joint to Marginal PDFs, Independence, Covariance, Correlation **Assignment Due: Monday 4pm**	Tutorial 13: **Tutorial Quiz 5**

Policies and Procedures

Macquarie University policies and procedures are accessible from Policy Central (https://staff.mq.edu.au/work/strategy-planning-and-governance/university-policies-and-procedures/policy-central). Students should be aware of the following policies in particular with regard to Learning and Teaching:

- Academic Appeals Policy
- Academic Integrity Policy
- Academic Progression Policy
- Assessment Policy
- Fitness to Practice Procedure
- Grade Appeal Policy
- Complaint Management Procedure for Students and Members of the Public
- Special Consideration Policy *(**Note:** The Special Consideration Policy is effective from 4 December 2017 and replaces the Disruption to Studies Policy.)*

Students seeking more policy resources can visit the Student Policy Gateway (https://students.mq.edu.au/support/study/student-policy-gateway). It is your one-stop-shop for the key policies you need to know about throughout your undergraduate student journey.

If you would like to see all the policies relevant to Learning and Teaching visit Policy Central (https://staff.mq.edu.au/work/strategy-planning-and-governance/university-policies-and-procedures/policy-central).

Student Code of Conduct

Macquarie University students have a responsibility to be familiar with the Student Code of Conduct: https://students.mq.edu.au/study/getting-started/student-conduct

Results

Results published on platform other than eStudent, (eg. iLearn, Coursera etc.) or released directly by your Unit Convenor, are not confirmed as they are subject to final approval by the University. Once approved, final results will be sent to your student email address and will be made available in eStudent. For more information visit ask.mq.edu.au or if you are a Global MBA student contact globalmba.support@mq.edu.au

Student Support

Macquarie University provides a range of support services for students. For details, visit http://students.mq.edu.au/support/

Learning Skills

Learning Skills (mq.edu.au/learningskills) provides academic writing resources and study strategies to help you improve your marks and take control of your study.

- Getting help with your assignment
- Workshops
- StudyWise
- Academic Integrity Module

The Library provides online and face to face support to help you find and use relevant information resources.

- Subject and Research Guides
- Ask a Librarian

Student Services and Support

Students with a disability are encouraged to contact the Disability Service who can provide appropriate help with any issues that arise during their studies.

Student Enquiries

For all student enquiries, visit Student Connect at ask.mq.edu.au

If you are a Global MBA student contact globalmba.support@mq.edu.au

IT Help

For help with University computer systems and technology, visit http://www.mq.edu.au/about_us/

offices_and_units/information_technology/help/.

When using the University's IT, you must adhere to the Acceptable Use of IT Resources Policy. The policy applies to all who connect to the MQ network including students.