

BUU11530 Quantitative Methods for Business

Module Outline Template 2026/27

Trinity Business School, Trinity College Dublin

Module code	BUU11530
Module title	Quantitative Methods for Business
Academic year	2026/27
ECTS	10
Lecturer(s)	Dr. Diego Pérez Guisande
Email	TBC
Office hours	TBC

Module Description

This module introduces the mathematical and statistical analysis that supports evidence-based business decision-making. Students learn how to analyse data, make statistical inferences, and use quantitative evidence to inform managerial choices.

The course combines conceptual foundations with practical application. Exercises, case material, and real-world data are used to connect quantitative methods with business problems in finance, economics, management, and related professional contexts.

Across the two semesters, students move between theory and hands-on analysis. Excel is the main software platform for the module, with occasional discussion of other relevant statistical tools and workflows.

Learning and Teaching Approach

The module is delivered through one 2-hour lecture block and one 1-hour tutorial each week.

Tutorials support the lecture material through problem practice, applied exercises, and revision of mathematical foundations needed for the module and the wider programme.

Learning Outcomes

The module prepares students for business and management contexts where data analysis is central to decision-making. After successfully completing this module, students should be able to:

1. Explain the role of data-driven insight in real-world business situations.
2. Clean, organise, summarise and analyse structured business datasets using descriptive and exploratory techniques.
3. Apply relevant mathematical concepts to business scenarios.
4. Use Excel to generate insight from real-world datasets.

5. Analyse and apply key statistical concepts in business settings.
6. Identify challenges and limitations in data-driven decision-making.

Workload

Content	Indicative hours
Lecturing hours	40
Tutorials	20
Preparation for lectures and tutorials	50
Reading of assigned materials and active reflection on lecture and course content and linkage to personal experiences	40
In-class exercises preparation	50
End-term exam preparation	50
Total	250

Recommended Texts and Required Readings

I recommend the following core textbooks for the course, which will be broadly followed throughout the course.

- Levine, Stephan and Szabat. *Statistics for Managers Using Microsoft Excel*. Global edition. Pearson.
- Jacques, Ian. *Mathematics for Economics and Business*. Pearson Education, 2006.

General Supplemental Readings

Students may consult additional foundational statistics texts through the library and other appropriate sources. Supplemental material may also be provided through Blackboard during the year.

1. Oakshott, Les. *Essential Quantitative Methods*. Red Globe Press/Macmillan International.
2. Lee and Peters. *Business Statistics Using Excel and SPSS*. Sage, with STATLAB, 1st ed., 2016.
3. Veal. *Business Research Methods: A Managerial Approach*. Pearson. Multiple copies are available in the TCD Library.
4. Gujarati, Damodar N., and Dawn C. Porter. *Basic Econometrics*. New York: McGraw-Hill Irwin, 2009.

As supplemental training in Excel, students are recommended to follow the LinkedIn Learning course *Excel Essential Training (Office 365/Microsoft 365)* by Dennis Taylor. To access it, students may log on from <https://lil.tcd.ie> with their credentials and search for the course title.

Student Preparation for the Module

Attendance Policy

Students are expected to attend all lectures and tutorials. Medical absences should be communicated to the instructors as early as possible.

Preparation

Students should complete assigned readings before class and allocate sufficient time outside class for revision, preparation, and assessment work, consistent with the workload guidance above. You will be given practice problems to solve during tutorials and in your own time. These problems will resemble exam questions. The solutions will be posted and you can discuss the problems during the office hours of the lecturer and/or tutor.

Course Communication

Course-related email communication must be sent from official TCD email addresses.

Assessment

The module will be assessed in three parts.

Component	Weight	Description
In-class exercises	40%	Four individual in-class exercises, each worth 10%. These may take the form of quizzes or problem-solving exercises and are completed and submitted in class.
End of semester 1 final exam	30%	A 2-hour exam with subjective, conceptual, and methodological questions. Students apply techniques from class and justify methodological choices using the statistical theory covered.
End of semester 2 final exam	30%	A 2-hour end-term assessment with subjective, conceptual, and methodological questions based on business data. Students apply second-semester techniques, derive insights, and justify their choices.

Your final grade will be calculated as follows: four in-class exercises worth 10% each, the Semester 1 exam worth 30%, and the Semester 2 exam worth 30%.

Reassessment

Students who fail the module must sit a supplemental examination during the supplemental examination period. Students who have failed only one semester will be required to sit the examination for that semester only. Students who have failed both semesters will be required to sit both examinations. Each supplemental examination will count for 100% of the grade for the relevant semester.

Additional information about exam protocol will be provided closer to the relevant due dates.

Assessment Schedule

Assessment	Timing	Weight	Notes
In-class exercise 1	During Week 5 - Semester 1 Lecture	10%	Laptop Required
In-class exercise 2	During Week 10 - Semester 1 Lecture	10%	Laptop Required
In-class exercise 3	During Week 4 - Semester 2 Lecture	10%	Laptop Required
In-class exercise 4	During Week 11 - Semester 2 Lecture	10%	Laptop Required
Semester 1 final exam	End of semester 1	30%	2 hours
Semester 2 final exam	End of semester 2	30%	2 hours

Teaching Schedule

Semester 1 – Michaelmas Term

Session	Date	Lecture topic	Tutorial / preparation
1	TBD	Introduction & Linear Equations	TBD
2	TBD	Linear Equations & Non-Linear Equations	TBD
3	TBD	Non-Linear Equations & Logs, Growth and Compounding	TBD
4	TBD	Systems of Equations and Matrices	TBD
5	TBD	In-Class Exercise I	TBD
6	Reading Week		
7	TBD	Data Description and Summarization	TBD
8	TBD	Measures of central tendency & Dispersion	TBD
9	TBD	Introduction to Probability	TBD
10	TBD	In-Class Exercise II	TBD
11	TBD	Revision	TBD

Semester 2 – Hilary Term

Session	Date	Lecture topic	Tutorial / preparation
1	TBD	Probability Recap & Discrete Probability Distributions	TBD
2	TBD	Continuous Probability Distributions	TBD
3	TBD	Sampling Distributions	TBD
4	TBD	In-Class Exercise III	TBD
5	TBD	Confidence Intervals	TBD
6	TBD	Hypothesis Testing - One Sample Test	TBD
7	Reading Week		
8	TBD	Hypothesis Testing - Two Sample Test	TBD
9	TBD	Correlations and the Linear Regression	TBD
10	TBD	Simple & Multiple Linear Regression	TBD
11	TBD	In-Class Exercise IV	TBD
12	TBD	Regression Diagnostics & Revision	TBD

Biographical Note

Diego Pérez Guisande is an Assistant Professor in Finance at Trinity Business School. He worked before as a Lecturer in Accounting & Finance at the University of Sussex and holds a PhD in Banking and Finance from University College Dublin (UCD). His research focuses on firm reputation, shareholder engagement, climate transition valuation, NGO activism and corporate lobbying. His research is quantitative and contributes to the fields of institutional investors, stakeholders and data providers in sustainable finance. Diego has published in the Journal of Business Ethics and Organization Studies and has presented his research at international academic conferences such as the European Finance Association.

Diego holds an MSc in Quantitative Finance from the University of Strathclyde and a BSc in Economics from Universidade de Vigo.