Module Definition Form (MDF)

Module code: MOD005757	**Version:** 4 **Date Amended:** 01/Sep/2025

1. Module Title
Introduction to Econometrics

2a. Module Leader
Emanuele Giovannetti

2b. School
School of Economics, Finance and Law

2c. Faculty
Faculty of Business and Law

3a. Level
5

3b. Module Type
Standard (fine graded)

4a. Credits
15

4b. Study Hours
150

5. Restrictions			
Type	**Module Code**	**Module Name**	**Condition**
Pre-requisite:	MOD004219	Business Statistics	Compulsory
Pre-requisite:	MOD005758	Statistics	Compulsory
Co-requisites:	None		
Exclusions:	None		
Courses to which this module is restricted:	BSc (Hons) Finance with Economics, including placement BSc (Hons) Business with Economics, including placement and extended		

LEARNING, TEACHING AND ASSESSMENT INFORMATION

6a. Module Description

This module builds on the Level 4 Statistics Modules and develops advanced quantitative skills essential for both business decisions and economic analysis. You'll receive a gentle introduction to exploratory data analysis based on statistics and data visualization, descriptive and predictive modelling based on machine learning, and data-driven decision-making based on decision science principles and model evaluation. You'll merge business-oriented data science ideas with a more in-depth study of statistical learning theory. Through examples, you'll understand how to choose the right combinations of methods and data, to best address a wide variety of economic and business decisions.

To support your understanding, you'll use a mix of well-known and leading-edge methods from data analysis and machine learning during your seminars where you'll put this theory into practice solving data problems and applying to economic and business decisions. In these seminars, you'll explore examples of method implementations in R language code, a library of custom R utility functions and links to select open-source libraries of other useful R functions, showing how to apply the methods.

6b. Outline Content

- Topic 1: Introduction to an end-to-end data-to-decision process
- Topic 2: Data Analysis: Data Preparation, Data Exploration, & Data Transformation
- Topic 3: Predictive Modelling: Classification
- Topic 4: Predictive Modelling: Regression
- Topic 5: Predictive Modelling Evaluation Methods

6c. Key Texts/Literature

The reading list to support this module is available at: https://readinglists.aru.ac.uk/

6d. Specialist Learning Resources

R : An open-source programming language and environment for statistical computing, data analysis, and graphics.

7. Learning Outcomes (threshold standards)		
No.	**Type**	**On successful completion of this module the student will be expected to be able to:**
1	Knowledge and Understanding	Understand the logic underlying the constructions of econometrics decision models.
2	Knowledge and Understanding	Understand the principles of Data exploration and Visualization.
3	Knowledge and Understanding	Understand the principles underlying Classification and Regression.
4	Intellectual, practical, affective and transferrable skills	Apply Codes for decisions problems based on Data Transformation, Classification and Regression using R.

8a. Module Occurrence to which this MDF Refers				
Year	**Occurrence**	**Period**	**Location**	**Mode of Delivery**
2025/6	ZZF	Template For Face To Face Learning Delivery		Face to Face

8b. Learning Activities for the above Module Occurrence			
Learning Activities	**Hours**	**Learning Outcomes**	**Details of Duration, frequency and other comments**
Lectures	0	N/A	N/A
Other teacher managed learning	26	1-4	1-hour Tutor-led Workshop (1 hr x 11 weeks) Screencast or equivalent (20 minute maximum) x 10 weeks 1-hour Student led Workshop (1 hr x 12 weeks) .
Student managed learning	124	1-4	Learning activities provided and explained on Canvas and assessment preparations
TOTAL:	150		

9. Assessment for the above Module Occurrence					
Assessment No.	**Assessment Method**	**Learning Outcomes**	**Weighting (%)**	**Fine Grade or Pass/Fail**	**Qualifying Mark (%)**
010	Coursework	1-4	100 (%)	Fine Grade	30 (%)
In class Test 1 1:15 hours and In class Test 2 1:50 hours					

Assessment components for Element 010				
Component No.	**Assessment Title**	**Submission Method**	**Weighting (%)**	**Components needed for Mark Calculation?**
010/1	In class test 1: covering: Economic Decisions, Data exploration and Visualization		30 (%)	All
010/2	In class test 2, covering: Predictive Modelling: Regression and Evaluation Methods		70 (%)	

In order to pass this module, students are required to achieve an overall mark of 40% (for modules at levels 3, 4, 5 and 6) or 50% (for modules at level 7*).

In addition, students are required to:
(a) achieve the qualifying mark for each element of fine graded assessment as specified above
(b) pass any pass/fail elements

[* the pass mark of 50% applies for all module occurrences from the academic year 2024/25 – see Section 3a of this MDF to check the level of the module and Section 8a of this MDF to check the academic year]