ECP77001 — Econometrics I

Module Information	
Module Code	*ECP77001*
Module Title	*Econometrics I*
Department	*Economics*
Module Personnel	*Professor Tsenguunjav Byambasuren*
Academic Year	*2026–27*
Credit Weighting	*10 credits*
Semester	*Semester 1*
Contact Hours	*20 hours of lectures and 18 hours of computer laboratory sessions*

Module Content	
Module Description	*The module covers the following topics:* • *Research Design and Causal Inference* • *The Linear Regression Model: Least squares and other estimation methods; Properties of estimators; Goodness of fit; Hypothesis testing* • *Instrumental variables estimation: The identification challenge; Two-stage least squares; Generalised Method of Moments; Weak instruments* • *Econometric Models for Panel Data: Difference-in-differences; Fixed effects estimator; Random effects estimator* • *Models with Limited Dependent Variables: Principle of Maximum Likelihood Estimation; Binary choice models: the linear probability model, probit and logit models; Multi response models*
Module Learning Aims	*The aim of this module is to provide students with the skills required to undertake independent applied research using modern econometric methods. The module provides a balance between theoretical and applied econometrics and aims to extend students' understanding of the subject to an advanced level as each part progresses.*

Module Content	
	Students attending this module will deepen their theoretical knowledge of the topics and will develop the necessary practical skills to use those methods in empirical research. *The module will be delivered through a combination of lectures and computer laboratory sessions. These applied sessions will introduce students to the use of Stata and will be led by a Teaching Assistant.*
Learning Outcomes	*On completion of the module, students will be able to:* • *derive econometric estimators for linear regression, panel data and limited dependent variable models;* • *show the properties of these estimators and understand the underlying assumptions required;* • *derive appropriate tests for the underlying assumptions and correct for violations of these assumptions;* • *confidently discuss the challenge of identification in empirical research;* • *select the appropriate econometric approach for different data and empirical settings;* • *use STATA to apply these techniques in practice.*
Indicative Reading / Resources	*The core textbook for this module is:* • *Wooldridge, J. M., Econometric Analysis of Cross Section and Panel Data, latest edition, MIT Press.* *Students may also find the following text books of use:* • *Angrist, J. and Pischke, J. (2009), Mostly Harmless Econometrics, Princeton University Press.* • *Baum, C. F. (2006), An Introduction to Modern Econometrics using Stata. Stata Press.* • *Davidson, R. D. and MacKinnon J. G. (2004), Econometric Theory and Methods, Oxford University Press.* • *Pevalin, D. and Robson, K. (2009), The Stata Survival Manual. McGraw Hill.* *The module will primarily follow the Wooldridge text book. Angrist and Pischke provide an excellent practical introduction to using econometrics and is a must read for students. In addition, supplementary reading will be provided from time to time as the module progresses. Baum and Pevalin and Robson are important source for the applied component of the module.*

Assessment	
Assessment Components	*Individual project 50%, Final exam 50%*
Assessment Details	*N/A*

Additional Information	
Prerequisites	*None*
Co-requisites	*None*
Any other information	*N/A*