ECON 3023 ECONOMIC MODELLING AND PREDICTIVE ANALYTICS

Credit Points 10

Description Economic Modelling and Predictive Analytics equips students with the tools to build, estimate, and interpret economic and predictive models used in research, policy, and business decision-making. Topics will include the properties of estimators, hypothesis testing, specification error, multicollinearity, dummy variables, heteroskedasticity and serial correlation. The subject integrates hands-on experience with data and statistical software to address real-world problems.

School Business

Student Contribution Band

Check your fees via the Fees (https://www.westernsydney.edu.au/currentstudents/current_students/fees/) page.

Level Undergraduate Level 3 subject

Pre-requisite(s) MATH 1030 or
ECON 1006 or
ECON 1016

Learning Outcomes

After successful completion of this subject, students will be able to:

1. Apply econometric techniques to model and interpret economic data.
2. Use software tools to conduct econometric analysis.
3. Apply predictive analytics (machine learning) to collect and interpret economic data.
4. Collaborate effectively in teams to report results.

Subject Content

1. Econometrics and testing economic hypotheses.
2. The probability foundations of econometrics.
3. Point estimation in the classical linear econometric model; least squares and likelihood criteria.
4. Hypothesis testing: the Wald, Lagrange multiplier and likelihood ratio tests.
5. Model diagnostics; heteroskedasticity, autocorrelation, model specification testing.
6. Generalised least squares, feasible generalised least squares including autocorrelated errors.
7. Dealing with binary independent variables.
8. Economic Forecasting Techniques
9. Machine Learning for Economists

Prescribed Texts

- Introductory Econometrics: Asia-Pacific Edition, 2nd Edition. Jeffrey M. Wooldridge, Mokhtarul Wadud, Jenny Lye, Roselyne Joyeux. Cengage, 2021.