



Econometrics and Business Statistics Disciplines & Programs

Disciplines

Area	Streams
Econometrics and Business Statistics	data analysis, statistical analysis, business forecasting, financial risk modelling, economic policy simulation, insurance modelling, actuarial mortality and longevity applications, actuarial risk pricing and reserving, econometric model building and estimation for climate and energy

Program: Actuarial, Business Analytics, Econometrics

The Actuarial, Business Analytics and Econometric Programs taught in the Econometrics and Business Statistics department are similar in the following ways:

- All Programs use data analysis, mathematics and statistics to produce models and forecasts that are relevant to business and economic problems.
- All Programs can be studied as a Bachelor of Commerce Major (Alternative study of Bachelor of Actuarial Science, with Actuarial Studies or Actuarial Analytics specialisations)
- Students can use elective space to study units across the three Programs
- All Program Graduates are in high demand

This table highlights the key differences between the Programs:

Feature	Actuarial	Business Analytics	Econometrics
Focus	Identification, analysis and quantification of financial risk	Data-driven techniques to improve prediction for business decision-making	Sophisticated models to assist economic and business decision-making
Student interest	Financial risk management for business and individuals	Business operations, product and customer data, sustainability, social impact	Socio-economic policy making and business management

Feature	Actuarial	Business Analytics	Econometrics
Student strength	Mathematics	Statistics, data analysis, software development	Mathematics and statistics
Employers	Insurers (life, general, health) Wealth managers (superannuation, pension, banking, finance, investment) Other (enterprise risk management, data analysis).	All businesses and organisations, where data is collected and analysed, including small to large, non-profits, government and academic analytics groups.	Government policy makers (Treasury, RBA, NGO), private sector focussed on markets and customers or general performance (banks, consulting groups).
Professional recognition	Actuaries Institute accreditation Society of Actuaries Centre of Excellence		
Society membership		Statistical Society of Australia	The Economic Society of Australia The International Association of Applied Econometrics The Econometric Society International Institute of Forecasters

Study unit course plan

This table shows the key subject areas taught in each Program. Students should refer to the Handbook for details.

Foundational studies (undergraduate Years 1 or 2)		
Actuarial	Business Analytics	Econometrics
Introduction to Financial Accounting	Business and Economic Statistics	Business and Economic Statistics
Business and Economic Statistics	Introductory Econometrics	Principles of Economics (micro and macro)
Principles of Economics (micro and macro)	Introduction to Data Analysis	Introductory Econometrics
Introductory Econometrics	Statistical thinking	Introduction to Data Analysis
Specialist & Application studies (undergraduate Years 2 or 3)		
Actuarial	Business Analytics	Econometrics
Mathematics for economics and business	Databases	Mathematics for business and economics
Statistical modelling for actuarial studies	Introduction to machine learning	Statistical modelling for actuarial studies
Probability and statistical inference	Applied forecasting	Probability and statistical inference
Financial econometrics	Statistical machine learning	Principles of econometrics
Corporate Finance	Advanced statistical modelling	Applied econometrics
Actuarial cash flow modelling	High dimensional data analysis	Applied time series econometrics
Applied forecasting	Business intelligence and data warehousing	Financial econometrics
Applied insurance methods		Econometrics and statistics of the environment
Financial mathematics under uncertainty		
Life insurance mathematics		
Foundation of quantitative finance		

Advanced studies (postgraduate)		
Actuarial	Business Analytics	Econometrics
Actuarial Practice (Actuarial Control Cycle)	Advanced R programming	Macro- and micro-econometrics
Introduction to machine learning (Data Science Principles)	Wild-caught data	Advanced financial econometrics
	Collaborative and reproducible practices	Bayesian inference and data analysis
	Diving deeply into data Exploration	Statistical theory and practice
	Communicating with data	Business forecasting
	Business analytics creative activity	High dimensional data analysis
		Time series and panel data econometrics