ECOM90010 Bayesian Econometrics

Credit Points:	12.5
Level:	9 (Graduate/Postgraduate)
Dates & Locations:	This subject is not offered in 2015.
Time Commitment:	Contact Hours: Three hours of classes per week plus three hours of seminars during the semester Total Time Commitment: Estimated total time commitment of 120 hours per semester
Prerequisites:	ECOM40006 Econometric Techniques / ECOM90013 Econometric Techniques

Subject	Study Period Commencement:	Credit Points:
ECOM40006 Econometric Techniques	Semester 1	12.50
ECOM90013 Econometric Techniques	Semester 1	12.50

Corequisites:	None
Recommended Background Knowledge:	None
Non Allowed Subjects:	ECOM40002 Bayesian Econometrics

Subject	Study Period Commencement:	Credit Points:
ECOM40002 Bayesian Econometrics	Semester 2	12.50

Core Participation Requirements:	For the purposes of considering requests for Reasonable Adjustments under the Disability Standards for Education (Cwth 2005), and Students Experiencing Academic Disadvantage Policy, academic requirements for this subject are articulated in the Subject Description, Subject Objectives, Generic Skills and Assessment Requirements for this entry. The University is dedicated to provide support to those with special requirements. Further details on the disability support scheme can be found at the Disability Liaison Unit website: http://www.services.unimelb.edu.au/disability/
Contact:	MBS @ Berkeley Street Level 4, 198 Berkeley Street Telephone: +61 3 8344 1670 Email: **mbs-enquiries@unimelb.edu.au (mailto:mbs-enquiries@unimelb.edu.au)** Web: **http://mbs.unimelb.edu.au/ (http://mbs.unimelb.edu.au/)**
Subject Overview:	The overall aim of this subject is to introduce students to the essential concepts and techniques/ tools used in Bayesian inference and to apply Bayesian inference to a number of econometric models. Basic concepts and tools introduced include joint, conditional and marginal probability distributions, prior, posterior and predictive distributions, marginal likelihood and Bayes theorem. Key tools and techniques introduced include Markov chain Monte Carlo (MCMC) techniques, such as the Gibbs and Metropolis Hastings algorithms, for model estimation and model comparison and the estimation of integrals via simulation methods. Throughout the course we will implement Bayesian estimation for various models such as the traditional regression model, panel models and limited dependent variable models using the Matlab programming environment.
Learning Outcomes:	**On successful completion of this subject students should be able to:** # Explain the concepts of joint, conditional and marginal probability density functions and their relevance for Bayesian inference; # Derive posterior density functions for common econometric models including the traditional regression model, discrete outcome models and panel models;

	# Explain the relevance of Markov chain Monte Carlo techniques for Bayesian inference; # Program Gibbs samplers and Metropolis-Hastings algorithms for a number of models including the traditional regression model, discrete outcome and panel models; # Interpret results from Bayesian inference; and # Estimate marginal likelihoods for model comparison.
Assessment:	Two hour end-of-semester examination (60%); and Three assignments due between weeks 6 and 12: Assignment 1 (15%) approx. 8-10 pages (not including computer code in matlab); Assignment 2 (15%) approx. 8-10 pages (not including computer code in matlab); Assignment 3 (10%) approx. 8-10 pages
Prescribed Texts:	You will be advised of prescribed texts by your lecturer.
Breadth Options:	This subject is not available as a breadth subject.
Fees Information:	Subject EFTSL, Level, Discipline & Census Date, http://enrolment.unimelb.edu.au/fees
Generic Skills:	**On successful completion of this subject, students should have improved the following generic skills:** # Evaluation of ideas, views and evidence; # Synthesis of ideas, views and evidence; # Strategic thinking; # Critical thinking; # Application of theory to economic policy and business decision making; # Summary and interpretation of information; # Application of Windows software; # Using and designing computer programs; # Statistical reasoning; # Problem solving skills; # Collaborative learning and teamwork; # Written communication; and # Oral communication.
Notes:	Students may not gain credit for both ECOM90010 Bayesian Econometrics and ECOM40002 Bayesian Econometrics.
Related Course(s):	Master of Commerce (Actuarial Science) Master of Economics