Econometrics

Module	Econometrics				
Module Code	FIN60110				
Module Coordinator	Vecer, Jan				
Last Update	2015/12/14				
Target Group	Programme(s)		Bachelor of Science		
	Term		6th semester		
	Compulsory/Elective Module		Elective Module		
	Module Duration		1 Semester		
	Credits:		6		
	Frequency		Annually		
	Language of instruction		English		
Workload: 150 h	Contact hours:	44 h	Independent Learning:	46 h	Assignments: 60 h
Prerequisites	-				
Usability in other Modules/Programmes	-				
Intended Learning Outcomes	**Knowledge:** • Students learn to understand and to apply general econometric principles with a special focus on economic and financial applications. Areas which are covered include regression analysis, time series analysis and panel data analysis. **Skills:** • The econometric techniques are applied to examples and cases from practice. **Competencies:** • The combination of theoretic knowledge and application to economic and financial cases enables students to critically evaluate the predictive powers of different explanatory variables.				
Module Structure	This course covers widely used econometric techniques such as the classical linear regression model, time series analysis and panel data analysis. Students learn the theory of these topics, they are provided with real data to apply these techniques, and they are confronted with real data to interpret the econometric results.				

Module Overview	This module will cover intermediary and advanced econometrics including:
	Review of probability and statistics:
	• Probability distributions (both discrete and continuous)
	• Expectation, variance and covariance
	• Law of large numbers
	• Central limit theorem
	• Statistical estimation, confidence intervals
	Classical linear regression models (both simple and multiple regression):
	• Properties of the ordinary least squares estimator
	• T-test
	• F-test
	Diagnostic tests for linear regression:
	• Non-linearity tests
	• Ramsey's RESET
	• Heteroscedasticity tests
	• Stability of parameters
	• Normality of residual
	• Durbin-Watson: autocorrelation of residuals
	• Multicolinearity
	• Principal components
	Time series modeling and forecasting:
	• Moving average processes
	• Autoregressive processes
	• Forecasting
	• Vector autoregressive models
	Volatility and correlation:
	• GARCH models
	Limited dependent variable models:
	• Logit
	• Probit
Forms of teaching, methods and support	Lecture with integrated worked examples and economic and financial applications.
Type of Assessment in the Module and Performance Points	(see table below)

Type of examination	Duration or length	Performance points	Due date or date of exam
Two assigned individual projects		120	During semester

Examination requirements:
Two take home projects.

Recommended Literature	Brooks, Chris (2008): Introductory econometrics for finance, 2nd ed, Cambridge University Press.