

Course Type	Course Code	Name of the Course	L	T	P	Credit
DE	NMSD513	Financial Econometrics	3	0	0	3

Course Objectives
Provide knowledge of modern econometric techniques commonly employed in the finance literature. Develop an understanding of statistical tools in the area of finance.
Learning Objectives
<ul style="list-style-type: none"> Understand the essential foundations of time series models. Construct and evaluate forecast models using financial time-series. Explain and apply models of volatility using financial time-series. Understand and estimate the relationship between variables using financial time-series.

Unit	Topics to be covered	Lecture hours	Learning outcomes
1	Overview of the classical linear regression model (CLRM)- Recent development and analysis of the CLRM, CLRM assumptions and diagnostic tests, Univariate time series modelling and forecasting- Moving average processes, Autoregressive processes, ARMA processes, Building ARMA models: The Box--Jenkins approach.	12	<ul style="list-style-type: none"> Understand the essential foundations of time series models. Construct and evaluate forecast models using financial time-series. Explain and apply models of volatility using financial time-series.
2	Multivariate models- Vector autoregressive models, Impulse responses and variance decompositions. Modelling long-run relationships in finance- Stationarity and unit root testing, Cointegration, Equilibrium correction or error correction models, Testing for and estimating cointegrating systems using the Johansen technique based on VARs	10	<ul style="list-style-type: none"> Understand and estimate the long run relationship between variables using financial time-series.
3	Modelling volatility and correlation- Autoregressive volatility models,	10	Understand and estimate the volatility models

	Autoregressive conditionally heteroscedastic (ARCH) models, Generalised ARCH (GARCH) models		
4	Panel data models-The fixed effects model, Time-fixed effects model, The random effects model. Limited dependent variable models- The linear probability model, The logit and probit models, Multinomial linear dependent variables.	10	Understand, construct and estimate panel data models. Understand and estimate the limited dependent variable models. •
	Total Lecture Hours	42	

Textbooks:

1. Introductory Econometrics for Finance, 2nd Edition, Chris Brooks, Cambridge University Press (2014)
2. Introduction to Econometrics, 4th Edition, Christopher Dougherty, Oxford University Press (2011).