Course Code	Course Title	L	T	P	C
BHUM210E	Econometrics	2	0	2	3
Pre-requisite	NIL	Syllabus version			
		1.0			

Course Objectives

1. To introduce the basic concepts of econometrics
2. To familiarize the students with econometrics methodology
3. To use appropriate econometrics tools based on data sets

Course Outcomes

Upon successful completion of the course students will be able to

1. Analyse economic data based on a broad knowledge of the linear regression model.
2. Apply the multiple regression model and test hypothesis.
3. Examine the use of dummy variables in regression model.
4. Explain the violations of OLS assumptions, such as multicollinearity, heteroscedasticity, andauto correlation.
5. Analyse and assess empirical results and econometric findings.
6. Design, develop and execute various time series models.

Module:1	Inferential Statistics	3 hours

Normal distribution, chi-square, t - and F- distributions - Estimation of parameters - Testing of hypotheses - Defining statistical hypotheses - Distributions of test statistics - Testing hypotheses related to population parameters - Type-I and Type-II errors; Power of a test - Tests for comparingparameters from two samples.

Module:2	The Nature and Scope of Econometrics	3 hours

Introduction to Econometrics – Methodology of Econometrics – Types of Data: Parametric and Non-Parametric test and Sources of Data – Population Regression Function and SampleRegression Function – Significance of error term.

Module:3	Simple Linear Regression Model: Two Variable Case	3 hours

Estimation of model by method of ordinary least squares - Properties of estimators – Gauss Markov Theorem (BLUE) - Goodness of Fit - Testing of Hypothesis - Scaling and units of measurement - Confidence Intervals - Forecasting.

Module:4	Multiple Regression Analysis	5 hours

Estimation of parameters - Properties of OLS estimators - Goodness of fit- R^2 and Adjusted R^2 – Partial regression coefficients - Testing Hypotheses: Individual and Joint - Functional Forms of RegressionModels.

Module:5	Dummy Variables in Regression Models	4 hours

Exogenous Dummy Variable - Formulating and interpreting coefficients on dummy explanatory variables, interactions involving dummy variables and the use of dummy variables in seasonal analysis, piece wise regression analysis, the dummy variable alternative to chow test.

Module:6	Violation of Classical Assumptions	4 hours

Multicollinearity – autocorrelation – heteroscedasticity – problems – causes – consequences remedial measures – model specification and diagnostic testing.

Module:7	Time Series Analysis and Forecasting Models	6 hours

Stationarity Vs. Non - Stationarity – Unit root Stochastic Process – Tests of Stationarity - The Unit Root Test - Transforming Non-stationary Time Series – Cointegration and Error Correction Mechanism (ECM) - ARIMA model – The Box Jenkins Methodology – Vector Auto regression (VAR) Estimation.		
Module:8	**Contemporary Issues**	**2 hours**
	Total Lecture Hours	**30 hours**

Text Book(s)

1.	Damodar. N. Gujarati and Sangeetha (2021), Basic Econometrics. 6th Edition, Tata McGraw-Hill.
2.	Christopher Dougherty (2016), Introduction to Econometrics. 5th Edition, Oxford UniversityPress.

Reference Books

1.	Jeffrey M.Wooldridge (2019), Introductory Econometrics: A Modern Approach, 7th Edition,Cengage Learning.
2.	G.S. Maddala and Kajal Lahiri (2012), Introduction to Econometrics, 3rd Edition, Pearson.
3.	Greene, W. (2018), Econometric Analysis, 8th Edition, Pearson.
4.	Chris Brooks (2014), Introductory Econometrics for Finance. 3rd Edition, CambridgeUniversity Press.

Indicative Experiments		**Hours**
1.	Statistical Inferences	**2 hours**
2.	The Classical Linear Regression Model	**4 hours**
3.	Multiple Regression Analysis	**4 hours**
4.	Functional Forms of Regression Models	**4 hours**
5.	Dummy (Binary) Variables	**4 hours**
6.	Testing for Violation of Classical Assumptions	**4 hours**
7.	Tests of specification errors (Ramsay Test)	**2 hours**
8.	Time Series Modelling	**6 hours**
	Total Laboratory Hours	**30 hours**

Mode of Evaluation: CAT, Quiz, Assignment and FAT.			
Recommended by Board of Studies	23-02-2023		
Approved by Academic Council	No. 69	Date	16-03-2023