Birla Institute of Technology & Science, Pilani
Hyderabad Campus

Second Semester 2023-24
Course Handout (Part-II)

Date: **09/01/2024**

In addition to part-I (General Handout for all courses appended to the time table) this portion gives further specific details regarding the course.

Course No. : **ECON F420**
Course Title : ***Applied Macroeconometrics***
Instructor-in-Charge : *SHREYA BISWAS (shreya@hyderabad.bits-pilani.ac.in)*

Scope and Objective of the Course:

The primary focus of the course is to get familiarized with the components of time series and elementary forecasting techniques using univariate and multivariate economic data. In addition to stationary time series analysis, non-stationary time series analysis techniques which are widely applied in modeling economic and financial data are introduced. At the end of the course students should be able to:

i) Understand the nature of time series data.
ii) Apply of time series data in finance and macroeconomics
iii) Forecast macro time series like inflation, interest rates, etc.
iv) Build a time series models using real world data

Textbooks:

1. Enders, W.: *Applied Econometric Time Series*, Third edition, John Wiley & Sons.
2. Wooldridge, Jeffrey*: Introductory Econometrics: A Modern Approach*, Fifth edition, Cengage Learning.
3. Favero C.A., *Applied Macroeconometrics,* Oxford, University Press, 2001

Additional reading:

1. Campbell, J.Y.' Yo, A.W.; and MacKinlay, A.C.: *The Econometrics of Financial Markets*, Princeton University Press.

Course Plan:

Lecture No.	Learning objectives	Topics to be covered	Chapter in the Text Book
1-6	Understanding time series data and its properties	Introduction to time series, Regression analysis with TS data, Distributed lag models, Highly persistent times series	Wooldridge Ch10, 11, 12
7-15	Understanding stationary time series data	Stationary time series – AR & MA process, ACFs, PACFs , ARMA models, forecasting, Box-Jenkins Methodology	Enders Ch2

16-25	Understanding properties of non-stationary times series	Models with deterministic trend; Structural changes, Models with stochastic trend – unit root processes – ADF tests, asset return prediction using RW model	Enders Ch-4
26-30	Modelling volatility	ARCH, GARCH processes, News impact curve, GJR model	Ender Ch3
31-35	Multivariate times series analysis	Spurious regression in time series, Cointegration and error correction models	Enders Ch6
36-40	Multivariate times series analysis	VAR and Granger causality	Enders Ch5

Evaluation Scheme:

Component	Duration	Weightage (%)	Date & Time	Nature of Component
Quizzes (2 out of 3)	20 Minutes	20%		OB
Assignments (2)		15%		OB
Mid-semester Exam	1.5hour	30%	11/03 - 4.00 - 5.30PM	CB
Comprehensive Exam	2 Hour	35%	07/05 AN	CB

Chamber Consultation Hour: Tue and Thurs- 4:00p.m.-4:30p.m. (with prior email appointment)
Notice: All notices will be displayed on CMS and Economics & Finance Notice Board.
Make-up policy: Make-up will be given only on Doctor's/Warden's recommendation and with prior (at least 01 day before the test/exam) permission of the InstructorinCharge/Instructor.
*Note: No make-ups for the quizzes.
Academic Honesty and Integrity Policy: Academic honesty and integrity are to be maintained by all the students throughout the semester and no type of academic dishonesty is acceptable.

Instructor-in-Charge
ECON F420