EF3451: ECONOMIC AND BUSINESS FORECASTING

Effective Term

Semester A 2022/23

Part I Course Overview

Course Title

Economic and Business Forecasting

Subject Code

EF - Economics and Finance

Course Number

3451

Academic Unit

Economics and Finance (EF)

College/School

College of Business (CB)

Course Duration

One Semester

Credit Units

3

Level

B1, B2, B3, B4 - Bachelor's Degree

Medium of Instruction

English

Medium of Assessment

English

Prerequisites

EF3450 Principles of Econometrics or equivalent course

Precursors

Nil

Equivalent Courses

Nil

Exclusive Courses

Nil

Part II Course Details

Abstract

This course is designed to equip students with the knowledge and skills of econometric modelling and empirical analysis so that they can perform forecasts with economic and financial data. Topics include econometric approaches to forecasting, forecasting with ARIMA processes, unit root and co-integration tests, ARCH modelling, and forecast evaluation. It also enables students to use econometric software packages to conduct empirical analysis and to discover the appropriate models to match the intended forecasting applications. The computer software packages used in this course are WinRATS, EViews and SAS, which are essential tools for further studies and professional career development in the economic and finance areas.

Course Intended Learning Outcomes (CILOs)

	CILOs	Weighting (if app.)	DEC-A1	DEC-A2	DEC-A3
1	Apply time series econometric models to forecast economic and financial variables and to compare and integrate different forecasting models to get a better understanding of potential applications of forecasting models.	50	x	x	x
2	Identify the pattern of economic fluctuations and estimate and explain the pattern of economic fluctuations by employing forecasting models.	20	x	x	x
3	Evaluate economic and financial forecasting performance, and determine how to improve on forecasting accuracy.	10	x	x	
4	Use statistical and econometric software packages for forecasting practice.	20		x	x

A1: Attitude
Develop an attitude of discovery/innovation/creativity, as demonstrated by students possessing a strong sense of curiosity, asking questions actively, challenging assumptions or engaging in inquiry together with teachers.

A2: Ability
Develop the ability/skill needed to discover/innovate/create, as demonstrated by students possessing critical thinking skills to assess ideas, acquiring research skills, synthesizing knowledge across disciplines or applying academic knowledge to real-life problems.

A3: Accomplishments
Demonstrate accomplishment of discovery/innovation/creativity through producing /constructing creative works/new artefacts, effective solutions to real-life problems or new processes.

Teaching and Learning Activities (TLAs)

	TLAs	Brief Description	CILO No.	Hours/week (if applicable)
1	Lectures	The lecture will cover the econometric approaches to forecasting, forecasting with ARIMA processes, unit root and co-integration test, ARCH modelling, and forecast evaluation. Basic concepts and crucial assumptions of the models will be discussed, and how the models can be applied to perform a variety of forecasting tasks. Demonstrate the use of computer software and illustrate the applications of forecasting models by using case studies or real life examples.	1, 2, 3	3 hours lecture per week
2	Group Project and presentation	Students are required to explain the theory, variables, and models, and point out the relationship between the variables in the theoretical model and the actual data available. Students should make estimation using both the regression approach and the Box-Jenkins time series approach, with necessary data transformation and optimal model selection. The forecasting performance should also be discussed and evaluated. Through the group project, students will get a better understanding of different forecasting models and practise their use of the computer software packages. Teamwork and presentation skills are also evaluated.	1, 2, 3, 4	

3	Homework assignments and Mid-term examination	The homework assignments and mid-term examination will test students on their understanding of the basic econometric forecasting models, applications, and limitations of the models. They help students discover a set of forecasting techniques that best fit their forecast needs.	1, 2, 3, 4	

Assessment Tasks / Activities (ATs)

	ATs	CILO No.	Weighting (%)	Remarks (e.g. Parameter for GenAI use)
1	Mid-term exam	1, 2, 3	20	(one 1 hour exam)
2	Projects and presentation. This includes contributions to in-class discussion and debate	2, 3	20	Projects are based on real economic or financial data.
3	Homework assignments	1, 2, 3, 4	10	

Continuous Assessment (%)

50

Examination (%)

50

Examination Duration (Hours)

2

Additional Information for ATs

Students are required to pass both coursework and examination components in order to pass the course.

Assessment Rubrics (AR)

Assessment Task

1. Mid-term exam

Criterion

Marks

Excellent (A+, A, A-)

Deep knowledge of core concepts and techniques in time-series econometric forecasting.

Good (B+, B, B-)

Good knowledge of core concepts and techniques in time-series econometric forecasting.

Fair (C+, C, C-)

Knowledge of core concepts and techniques in time-series econometric forecasting.

Marginal (D)

Sufficient familiarity with the subject of time-series econometric forecasting.

Failure (F)

Little evidence of familiarity with the subject of time-series econometric forecasting.

Assessment Task

2. Projects and presentation

Criterion

Marks

Excellent (A+, A, A-)

Very strong overall ability to discover and innovate. Capable of creatively integrating and synthesizing econometric forecasting techniques in wider contexts of business decision-making.

Good (B+, B, B-)

Good overall ability to discover and innovate. Capable of correctly applying econometric forecasting techniques in economics and business.

Fair (C+, C, C-)

Some ability to discover and innovate. Capable of applying econometric forecasting techniques in some contexts.

Marginal (D)

Marginal ability to discover and innovate. Some, albeit limited, ability to apply econometric forecasting techniques.

Failure (F)

Little evidence of ability to discover and innovate. Lack of ability to apply econometric forecasting techniques.

Assessment Task

3. Homework assignments

Criterion

Marks

Excellent (A+, A, A-)

Deep knowledge of core concepts and techniques. Very proficient in using statistical and econometric software to manipulate and analyse real world data.

Good (B+, B, B-)

Good knowledge of core concepts and techniques. Proficient in using statistical and econometric software to manipulate and analyse real world data.

Fair (C+, C, C-)

Knowledge of core concepts and techniques. Evidence of using statistical and econometric software to analyse real world data.

Marginal (D)

Elementary knowledge of core concepts and techniques. Some, albeit limited, evidence of using statistical and econometric software to analyse real world data.

Failure (F)

Little evidence of familiarity with the subject of time-series econometric forecasting. Lack of ability in using statistical and econometric software.

Assessment Task

4. Final examination

Criterion

Marks

Excellent (A+, A, A-)

Deep knowledge of core concepts and strong ability to apply the forecasting models and techniques outlined in CILOs.

Good (B+, B, B-)

Good knowledge of core concepts and good ability to apply the forecasting models and techniques outlined in CILOs.

Fair (C+, C, C-)

Knowledge of core concepts and some ability to apply the forecasting models and techniques outlined in CILOs.

Marginal (D)

Sufficient familiarity with the subject of time-series econometric forecasting.

Failure (F)

Little evidence of familiarity with the subject of time-series econometric forecasting.

Part III Other Information

Keyword Syllabus

1. Forecasting models.
2. Trend, seasonality, business cycle.
3. ARIMA model.
4. Regression.
5. VAR.
6. GARCH.
7. Time series.

Reading List

Compulsory Readings

	Title
1	Diebold, Francis X. (2007), Elements of Forecasting. Cincinnati: South-Western Publishing Co., 4th edition.

Additional Readings

	Title
1	Newbold, Paul and Bos (1994), Theodore, Introductory Business and Economic Forecasting. Cincinnati: South-Western Publishing Co., 2nd edition.
2	DeLurgio, Stephen A.(1998), Forecasting Principles and Applications, Boston: Irwin/McGraw-Hill.
3	Evans, Michael K. (2002), Practical Business Forecasting, Oxford: Blackwell Publishing.
4	Pindyck, Robert S. and Rubinfeld, Daniel L. (1998), Econometric Models and Economic Forecasts, Boston: Irwin/McGraw-Hill, 4th edition.

5	Wooldridge, J.M. (2009), Introductory Econometrics: A Modern Approach. Thomson South-Western College Publishing, 4th edition.