City University of Hong Kong
Course Syllabus

offered by Department of Economics and Finance
with effect from Semester A 2017/18

Part I Course Overview

Course Title:	**Economic and Business Forecasting**
Course Code:	**EF3451**
Course Duration:	**1 Semester**
Credit Units:	**3**
Level:	**B3**
Proposed Area: *(for GE courses only)*	☐ Arts and Humanities ☐ Study of Societies, Social and Business Organisations ☐ Science and Technology
Medium of Instruction:	**English**
Medium of Assessment:	**English**
Prerequisites: *(Course Code and Title)*	**EF3450 Principles of Econometrics or equivalent course**
Precursors: *(Course Code and Title)*	**Nil**
Equivalent Courses: *(Course Code and Title)*	**Nil**
Exclusive Courses: *(Course Code and Title)*	**Nil**

Part II Course Details

1. 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.

2. Course Intended Learning Outcomes (CILOs)

(CILOs state what the student is expected to be able to do at the end of the course according to a given standard of performance.)

No.	CILOs[#]	Weighting* (if applicable)	Discovery-enriched curriculum related learning outcomes (please tick where appropriate)		
			A1	*A2*	*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 %	√	√	√
2.	Identify the pattern of economic fluctuations and estimate and explain the pattern of economic fluctuations by employing forecasting models.	20 %	√	√	√
3.	Evaluate economic and financial forecasting performance, and determine how to improve on forecasting accuracy.	10 %	√	√	
4	Use statistical and econometric software packages for forecasting practice.	20 %		√	√
		100%			

** If weighting is assigned to CILOs, they should add up to 100%.*

[#] Please specify the alignment of CILOs to the Gateway Education Programme Intended Learning outcomes (PILOs) in Section A of Annex.

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 self-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.

3. Teaching and Learning Activities (TLAs)

(TLAs designed to facilitate students' achievement of the CILOs.)

TLA	Brief Description	CILO No.				Hours/week (if applicable)
		1	2	3	4	
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.	√	√	√		3 hours lecture per week
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.	√	√	√	√	
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.	√	√	√	√	

4. Assessment Tasks/Activities (ATs)

(ATs are designed to assess how well the students achieve the CILOs.)

Assessment Tasks/Activities	CILO No.				Weighting*	Remarks
	1	2	3	4		
Continuous Assessment: 50%						
Mid-term exam	√	√	√		20%	(one 1 hour exam)
Projects and presentation. This includes contributions to in-class discussion and debate	√	√	√	√	20%	Projects are based on real economic or financial data.
Homework assignments	√	√	√	√	10%	
Examination: 50% (duration: 2 hours, if applicable)						
Final exam	√	√	√		50%	
** The weightings should add up to 100%.*					100%	

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

5. Assessment Rubrics

(Grading of student achievements is based on student performance in assessment tasks/activities with the following rubrics.)

Assessment Task	Criterion	Excellent (A+, A, A-)	Good (B+, B, B-)	Fair (C+, C, C-)	Marginal (D)	Failure (F)
1. Mid-term exam	Marks	Deep knowledge of core concepts and techniques in time-series econometric forecasting.	Good knowledge of core concepts and techniques in time-series econometric forecasting.	Knowledge of core concepts and techniques in time-series econometric forecasting.	Sufficient familiarity with the subject of time-series econometric forecasting.	Little evidence of familiarity with the subject of time-series econometric forecasting.
2. Projects and presentation	Marks	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 overall ability to discover and innovate. Capable of correctly applying econometric forecasting techniques in economics and business.	Some ability to discover and innovate. Capable of applying econometric forecasting techniques in some contexts.	Marginal ability to discover and innovate. Some, albeit limited, ability to apply econometric forecasting techniques.	Little evidence of ability to discover and innovate. Lack of ability to apply econometric forecasting techniques.
3. Homework assignments	Marks	Deep knowledge of core concepts and techniques. Very proficient in using statistical and econometric software to manipulate and analyse real world data.	Good knowledge of core concepts and techniques. Proficient in using statistical and econometric software to manipulate and analyse real world data.	Knowledge of core concepts and techniques. Evidence of using statistical and econometric software to analyse real world data.	Elementary knowledge of core concepts and techniques. Some, albeit limited, evidence of using statistical and econometric software to analyse real world data.	Little evidence of familiarity with the subject of time-series econometric forecasting. Lack of ability in using statistical and econometric software.
4. Final examination	Marks	Deep knowledge of core concepts and strong ability to apply the forecasting models and techniques outlined in CILOs.	Good knowledge of core concepts and good ability to apply the forecasting models and techniques outlined in CILOs.	Knowledge of core concepts and some ability to apply the forecasting models and techniques outlined in CILOs.	Sufficient familiarity with the subject of time-series econometric forecasting.	Little evidence of familiarity with the subject of time-series econometric forecasting.

Part III Other Information (more details can be provided separately in the teaching plan)

1. Keyword Syllabus

Forecasting models.
Trend, seasonality, business cycle.
ARIMA model.
Regression.
VAR.
GARCH.
Time series.

2. Reading List

2.1 Compulsory Readings

(Compulsory readings can include books, book chapters, or journal/magazine articles. There are also collections of e-books, e-journals available from the CityU Library.)

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

2.2 Additional Readings

(Additional references for students to learn to expand their knowledge about the subject.)

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.