City University of Hong Kong
Course Syllabus

offered by Department of Economics and Finance
with effect from Semester A 2022 /23

Part I   Course Overview

Course Title: Advanced Econometrics

Course Code: EF5470

Course Duration: 1 semester

Credit Units: 3

Level: P5

Medium of Instruction: English

Medium of Assessment: English

Prerequisites:
(Course Code and Title) Nil

Precursors:
(Course Code and Title) Background of basic statistics

Equivalent Courses:
(Course Code and Title) Nil

Exclusive Courses:
(Course Code and Title) Nil

Part II   Course Details

1.   Abstract

The aim of this course is to provide research degree students with basic econometric techniques applicable to empirical work. Students will apply these techniques and concepts to real life cases and examine the usefulness of various economic and finance models by testing them with case studies. By engaging in these exercises, students further strengthen their discovery skills.

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.	Utilize basic probability and statistical theories to specification, estimation, and prediction with econometric models; Derive basic mathematical results that are useful in applications.	30%	√	√	
2.	Formulate econometric models to perform empirical investigations in economics and finance.	30%	√	√	
3.	Compile economic and financial data for empirical analysis.	20%	√	√	
4.	Use econometric software packages for simple empirical analysis; make use of the knowledge acquired from the lectures and the software techniques to analyze real life issues and develop their problem solving skills.	20%	√	√	√
		100%			

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	Discuss basic econometric techniques and examine the usefulness of various economic and finance models by testing them with case studies.	√	√	√		2 hours lecture per week
Use real-world examples to illustrate the applications of econometric models.	Students will solve real-world empirical issues by using econometric software. Empirical applications focus on underlying economic rationale and their mathematical interpretations.		√	√	√	1 hour lecture per week

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: 60 %						
Midterm		√			20%	
Term Project			√		20%	
Assignments				√	20%	
Examination: 40 % (duration: 3 hours , if applicable)						
Final Examination	√				40%	
					100%	

5. Assessment Rubrics

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

Applicable to students admitted in Semester A 2022/23 and thereafter

Assessment Task	Criterion	Excellent (A+, A, A-)	Good (B+, B)	Marginal (B-, C+, C)	Failure (F)
1. Midterm	Demonstrate having good understanding of basic econometric techniques and capability of appraising various economic and finance models	High	Significant	Basic	Not even reaching marginal levels
2. Term Project	Demonstrate the capability of solving real-world empirical issues by using econometric software.	High	Significant	Basic	Not even reaching marginal levels
3. Assignments	Demonstrate the capability of comprehending and applying econometric techniques to solve assigned problems.	High	Significant	Basic	Not even reaching marginal levels
4. Final Examination	Demonstrate having good understanding of basic econometric techniques and capability of appraising various economic and finance models	High	Significant	Basic	Not even reaching marginal levels

Applicable to students admitted before Semester A 2022/23

Assessment Task	Criterion	Excellent (A+, A, A-)	Good (B+, B, B-)	Fair (C+, C, C-)	Marginal (D)	Failure (F)
1. Midterm	Demonstrate having good understanding of basic econometric techniques and capability of appraising various economic and finance models	High	Significant	Moderate	Basic	Not even reaching marginal levels
2. Term Project	Demonstrate the capability of solving real-world empirical issues by using econometric software.	High	Significant	Moderate	Basic	Not even reaching marginal levels
3. Assignments	Demonstrate the capability of comprehending and applying econometric techniques to solve assigned problems.	High	Significant	Moderate	Basic	Not even reaching marginal levels
4. Final Examination	Demonstrate having good understanding of basic econometric techniques and capability of appraising various economic and finance models	High	Significant	Moderate	Basic	Not even reaching marginal levels

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

1.   **Keyword Syllabus**
       (An indication of the key topics of the course.)

Ordinary Least Square, Heteroskedasticity, Autocorrelation, Generalized Least Square, Generalized Method of Moments, Maximum Likelihood Estimation, Autoregressive Moving Average, Vector Autoregression.

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.	Hayashi, F. (2000) *Econometrics*, Princeton University Press.

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