City University of Hong Kong
Course Syllabus

offered by Department of Economics and Finance
with effect from Semester A 2024 / 25

Part I   Course Overview

Course Title: **Advanced Econometrics**

Course Code: **EF8090**

Course Duration: **1 semester**

Credit Units: **3**

Level: **R8**

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 econometric techniques applicable to empirical work. This includes understanding the basis for estimation and inference of econometric models and techniques. 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 and research skills.

2.   **Course Intended Learning Outcomes (CILOs)**

No.	CILOs	Weighting (if applicable)	Discovery-enriched curriculum related learning outcomes		
			A1	*A2*	*A3*
1.	Apply probability and statistical theories to specification, estimation, and prediction with econometric models; Derive basic mathematical results that are useful in applications.	20%	√	√	
2.	Justify and overcome shortcoming and problem in models and estimation methods in research.	20%		√	√
3.	Apply formulated econometric models to perform empirical investigations in economics and finance.	20%	√	√	
4.	Design empirical analysis with economic and financial data.	20%	√	√	√
5.	Apply econometric software packages for simple empirical analysis; make use of the knowledge acquired from the lectures and the software techniques to analyse 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 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.

3. Learning and Teaching Activities (LTAs)

LTA	Brief Description	CILO No.					Hours/week (if applicable)
		1	2	3	4	5	
Lectures	Students will engage in formal lectures that discusses 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)

Assessment Tasks/Activities	CILO No.					Weighting	Remarks
	1	2	3	4	5		
Continuous Assessment: 50 %							
Midterm	√	√	√			30%	
Assignments	√	√	√	√	√	20%	
Examination: 50 % (duration: 3 hours, if applicable)							
Final Examination	√	√	√			50%	
						100%	

5. Assessment Rubrics

Applicable to students admitted before Semester A 2022/23 and in Semester A 2024/25 & thereafter

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. Assignments	Demonstrate the capability of comprehending and applying econometric techniques to solve assigned problems.					
3. Final Examination	Demonstrate having good understanding of basic econometric techniques and capability of appraising various economic and finance models					

Applicable to students admitted from Semester A 2022/23 to Summer Term 2024

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. Assignments	Demonstrate the capability of comprehending and applying econometric techniques to solve assigned problems.				
3. Final Examination	Demonstrate having good understanding of basic econometric techniques and capability of appraising various economic and finance models				

Part III   Other Information

1.   Keyword Syllabus

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

1.	Stock, J. and Watson, M. (2015). *Introduction to Econometrics*. Pearson.
2.	Wooldridge, J. (2010). *Econometric Analysis of Cross Sectional and Panel Data*. Second edition. MIT Press.
3.	Hayashi, F. (2000). *Econometrics.* Princeton University Press.
4.	Greene, W. H. (2019). *Econometric Analysis*. Princeton University Press.

2.2   Additional Readings

Nil