

EF8090: ADVANCED ECONOMETRICS

Effective Term

Semester A 2025/26

Part I Course Overview

Course Title

Advanced Econometrics

Subject Code

EF - Economics and Finance

Course Number

8090

Academic Unit

Economics and Finance (EF)

College/School

College of Business (CB)

Course Duration

One Semester

Credit Units

3

Level

R8 - Research Degree

Medium of Instruction

English

Medium of Assessment

English

Prerequisites

Nil

Precursors

Background of basic statistics

Equivalent Courses

Nil

Exclusive Courses

Nil

Part II Course Details

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.

Course Intended Learning Outcomes (CILOs)

CILOs		Weighting (if app.)	DEC-A1	DEC-A2	DEC-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	x	x	
2	Justify and overcome shortcoming and problem in models and estimation methods in research.	20		x	x
3	Apply formulated econometric models to perform empirical investigations in economics and finance.	20	x	x	
4	Design empirical analysis with economic and financial data.	20	x	x	x
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	x	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.

Learning and Teaching Activities (LTAs)

LTAs	Brief Description	CILO No.	Hours/week (if applicable)
1	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.	1, 3, 4, 5
			2 hours lecture per week

2	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.	2, 3, 4, 5	1 hour lecture per week
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Assessment Tasks / Activities (ATs)

	ATs	CILO No.	Weighting (%)	Remarks ("- " for nil entry)	Allow Use of GenAI?
1	Midterm	1, 2, 3	40	-	No
2	Assignments	1, 2, 3, 4, 5	10	-	Yes

Continuous Assessment (%)

50

Examination (%)

50

Examination Duration (Hours)

3

Assessment Rubrics (AR)**Assessment Task**

Midterm (for students admitted before Semester A 2022/23 and in Semester A 2024/25 & thereafter)

Criterion

Demonstrate having good understanding of basic econometric techniques and capability of appraising various economic and finance models

Excellent

(A+, A, A-) High

Good

(B+, B, B-) Significant

Fair

(C+, C, C-) Moderate

Marginal

(D) Basic

Failure

(F) Not even reaching marginal levels

Assessment Task

Assignments (for students admitted before Semester A 2022/23 and in Semester A 2024/25 & thereafter)

Criterion

Demonstrate the capability of comprehending and applying econometric techniques to solve assigned problems.

Excellent

(A+, A, A-) High

Good

(B+, B, B-) Significant

Fair

(C+, C, C-) Moderate

Marginal

(D) Basic

Failure

(F) Not even reaching marginal levels

Assessment Task

Final Examination (for students admitted before Semester A 2022/23 and in Semester A 2024/25 & thereafter)

Criterion

Demonstrate having good understanding of basic econometric techniques and capability of appraising various economic and finance models

Excellent

(A+, A, A-) High

Good

(B+, B, B-) Significant

Fair

(C+, C, C-) Moderate

Marginal

(D) Basic

Failure

(F) Not even reaching marginal levels

Assessment Task

Midterm (for students admitted from Semester A 2022/23 to Summer Term 2024)

Criterion

Demonstrate having good understanding of basic econometric techniques and capability of appraising various economic and finance models

Excellent

(A+, A, A-) High

Good

(B+, B) Significant

Marginal

(B-, C+, C) Basic

Failure

(F) Not even reaching marginal levels

Assessment Task

Assignments (for students admitted from Semester A 2022/23 to Summer Term 2024)

Criterion

Demonstrate the capability of comprehending and applying econometric techniques to solve assigned problems.

Excellent

(A+, A, A-) High

Good

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Assessment Task

Final Examination (for students admitted from Semester A 2022/23 to Summer Term 2024)

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Demonstrate having good understanding of basic econometric techniques and capability of appraising various economic and finance models

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Part III Other Information

Keyword Syllabus

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

Reading List

Compulsory Readings

Title	
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.

Additional Readings

Title	
1	Nil