

# EF3450: PRINCIPLES OF ECONOMETRICS

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## Effective Term

Semester A 2024/25

## Part I Course Overview

### Course Title

Principles of Econometrics

### Subject Code

EF - Economics and Finance

### Course Number

3450

### 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

EF2452 Mathematics for Economics and Finance or CB2200 Business Statistics

### Precursors

CB2201 Quantitative Methods or FB2201 Management Sciences II

### Equivalent Courses

Nil

### Exclusive Courses

Nil

## Part II Course Details

### Abstract

This course introduces the basic principles and methods for econometric modelling and quantitative analysis of real data in economics, finance and related disciplines. It also enables students to use econometrics software packages

which are essential for students who wish to pursue further studies or a professional career in economics, finance or related disciplines. Real-world economic and finance data will be used in this course to help students to master different econometric methods. By combining the knowledge acquired in class with software skills students will be able to discover how to apply econometric models to test economic and finance theories, and to predict economic time series. They will discover the econometrics tools and design econometric models to come up with effective solutions for a wide range of real-life questions.

### Course Intended Learning Outcomes (CILOs)

CILOs	Weighting (if app.)	DEC-A1	DEC-A2	DEC-A3
1 Apply econometric models to perform empirical investigations in business economics and finance; master basic econometric skills to analyse data in economics and finance.	80	x		x
2 Compile economic and financial data for empirical analysis; learn how to conduct empirical analysis using economic and finance data, and use these skills to discover the answers to real life questions.	10		x	
3 Apply statistical and econometric software packages for empirical analysis; apply econometric software packages.	10		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 where econometric models and case studies are used to illustrate applications.	1, 3	3 hours lecture per week
2 Coding Practice	Students will participate the use of econometric software (EViews). Use examples and problem sets to illustrate how to apply econometric techniques and econometric software to real life data.	1, 2, 3	

**Assessment Tasks / Activities (ATs)**

	ATs	CILO No.	Weighting (%)	Remarks (e.g. Parameter for GenAI use)
1	Mid-term exam (one 1 hour exam) Formulate econometric models to perform empirical investigations in business economics and finance; master basic econometric skills to analyse data in economics and finance. (CILO1)	1	30	
2	Contributions to in-class discussion and debate	2, 3	5	
3	Homework assignments: Compile economic and financial data for empirical analysis; Use statistical and econometric software packages for empirical analysis(CILO1, CILO2 and CILO3)	2	15	

**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**

Mid-term exam

**Excellent (A+, A, A-)**

Strong evidence of knowing how to apply the econometrics concepts outlined in CILOs. Students have demonstrated very strong overall ability to discover and innovate, and shown very strong evidence of accomplishments of discovery.

**Good (B+, B, B-)**

Evidence of knowing how to apply the econometrics concepts outlined in CILOs. Students have demonstrated strong overall ability to discover and innovate, and shown strong evidence of accomplishments of discovery.

**Fair (C+, C, C-)**

Some evidence of knowing how to apply the econometrics concepts outlined in CILOs. Students have demonstrated some ability to discover and innovate, and shown satisfactory evidence of accomplishments of discovery.

**Marginal (D)**

Sufficient familiarity with the subject of econometrics. Students have demonstrated marginal ability to discover and innovate, and shown marginal evidence of accomplishments of discovery.

**Failure (F)**

Little evidence of familiarity with the subject. Students have demonstrated little evidence of ability to discover and innovate, and shown little evidence of accomplishments of discovery.

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**Assessment Task**

Contributions to in-class discussion and debate

**Excellent (A+, A, A-)**

Almost never absent without prior approval or justifications and complete all in-class assignments.

**Good (B+, B, B-)**

Very seldom absence without prior approval or justifications and complete most in-class assignments.

**Fair (C+, C, C-)**

Occasionally miss classes without prior approval or justifications, and do not complete some of the in-class assignments.

**Marginal (D)**

Regularly miss classes without prior approval or justifications, and do not complete some of the in-class assignments.

**Failure (F)**

Frequent absence without prior approval or justifications and do not hand in many of the assignments.

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**Assessment Task**

Homework assignments

**Excellent (A+, A, A-)**

Strong evidence of knowing how to apply the econometrics concepts outlined in CILOs. Students have demonstrated very strong overall ability to discover and innovate, and shown very strong evidence of accomplishments of discovery.

**Good (B+, B, B-)**

Evidence of knowing how to apply the econometrics concepts outlined in CILOs. Students have demonstrated strong overall ability to discover and innovate, and shown strong evidence of accomplishments of discovery.

**Fair (C+, C, C-)**

Some evidence of knowing how to apply the econometrics concepts outlined in CILOs. Students have demonstrated some ability to discover and innovate, and shown satisfactory evidence of accomplishments of discovery.

**Marginal (D)**

Sufficient familiarity with the subject of econometrics. Students have demonstrated marginal ability to discover and innovate, and shown marginal evidence of accomplishments of discovery.

**Failure (F)**

Little evidence of familiarity with the subject. Students have demonstrated little evidence of ability to discover and innovate, and shown little evidence of accomplishments of discovery.

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**Assessment Task**

Final exam

**Excellent (A+, A, A-)**

Strong evidence of knowing how to apply the econometrics concepts outlined in CILOs. Students have demonstrated very strong overall ability to discover and innovate, and shown very strong evidence of accomplishments of discovery.

**Good (B+, B, B-)**

Evidence of knowing how to apply the econometrics concepts outlined in CILOs. Students have demonstrated strong overall ability to discover and innovate, and shown strong evidence of accomplishments of discovery.

**Fair (C+, C, C-)**

Some evidence of knowing how to apply the econometrics concepts outlined in CILOs. Students have demonstrated some ability to discover and innovate, and shown satisfactory evidence of accomplishments of discovery.

**Marginal (D)**

Sufficient familiarity with the subject of econometrics. Students have demonstrated marginal ability to discover and innovate, and shown marginal evidence of accomplishments of discovery.

**Failure (F)**

Little evidence of familiarity with the subject. Students have demonstrated little evidence of ability to discover and innovate, and shown little evidence of accomplishments of discovery.

## Part III Other Information

### Keyword Syllabus

1. Basic statistics: Mean, variance, covariance, correlation, statistical significance.
2. Least squares regression, Assumptions
3. Hypothesis testing, Prediction
4. Violation of assumptions
5. Unobserved variables, Omitted variable bias, Instrumental variables
6. Model selection: including and omitting variables,
7. Time series data

### Reading List

#### Compulsory Readings

Title	
1	Stock, James H., and Watson, Mark W. (2014). Introduction to Econometrics. Pearson, Global Edition, updated 3rd Edition.

#### Additional Readings

Title	
1	Wooldridge, Jeffrey M. (2009). Introductory Econometrics. Cengage Learning, 4th edition.
2	Heiss F. (2016). Using R for Introductory Econometrics. CreateSpace.