



# ÇANKAYA UNIVERSITY

## Faculty of Economics and Administrative Sciences

### Course Definition Form

#### Part I. Basic Course Information

<b>Department Name</b>	ECONOMICS	<b>Dept. Numeric Code</b>	3 1
<b>Course Code</b>	E C O N 4 3 4	<b>Number of Weekly Lecture Hours</b>	3
		<b>Number of Weekly Lab/Tutorial Hours</b>	0
		<b>Number of Credit Hours</b>	3
<b>Course Web Site</b>	http:// econ434.cankaya.edu.tr		<b>ECTS Credit</b>
			0 5

#### Course Name and Other Course Information

*This information will appear in the printed catalogs and on the web online catalog.*

<b>English Name</b>	PANEL DATA ECONOMETRICS
<b>Turkish Name</b>	PANEL VERİ EKONOMETRİSİ
<b>Mode of Delivery</b>	Face to face
<b>Language of Instruction</b>	English

#### Course Description

*Provide a brief overview of what is covered during the semester. This information will appear in the printed catalogs and on the web online catalog. Maximum 60 words.*

The course covers the basic panel data models and estimation methods; fixed and random effects models, dynamic panel data models, unbalanced panel data models, maximum Likelihood estimation, the Arellano and Bond estimator, the Arellano and Bover estimators, method of moments, generalized methods of moments, Nonstationary panels; panel unit root tests, panel cointegration tests, estimation and evaluation of panel cointegration models.

<b>Prerequisites</b> (if any) <i>Give course codes and check all that are applicable.</i>	1 <sup>st</sup>	2 <sup>nd</sup>	3 <sup>rd</sup>	4 <sup>th</sup>
	<input type="checkbox"/> Consent of the Instructor	<input type="checkbox"/> Senior Standing	<input type="checkbox"/> Give others, if any.	
<b>Co-requisites</b> (if any)	1 <sup>st</sup>	2 <sup>nd</sup>	3 <sup>rd</sup>	4 <sup>th</sup>
<b>Course Type</b> <i>Check all that are applicable</i>	<input type="checkbox"/> Must course for dept. <input type="checkbox"/> Must course for other dept.(s) <input checked="" type="checkbox"/> Elective course for dept. <input type="checkbox"/> Elective course for other dept.(s)			

**Part II. Detailed Course Information****Course Objectives***Maximum 100 words.*

The course will focus on; basic panel data models (fixed, random effects, dynamic models); estimation methods (Maximum likelihood, method of moments and generalized method of moments); analysis of nonstationary panels, panel unit root tests, panel cointegration and estimation methods

**Learning Outcomes***Explain the learning outcomes of the course. Maximum 10 items.*

Upon successful completion of this course, students will be able to:

1. examine basic properties of panel data
2. estimate and evaluate Fixed effects models
3. estimate and evaluate random effects models
4. make selection between fixed and random effects models
5. use maximum likelihood method
6. estimate and evaluate dynamic panel data models
7. use Generalized Method of Moments (GMM) method
8. estimate and evaluate unbalanced panel data models
9. apply panel unit root and cointegration tests.
10. estimate and evaluate panel cointegration models

**Textbook(s)***List the textbook(s), if any, and other related main course material.*

Author(s)	Title	Publisher	Publication Year	ISBN
Badi H. Baltagi	Econometric Analysis of Panel Data	John Wiley and Sons Third Edition		

**Reference Books***List, if any, other reference books to be used as supplementary material.*

Author(s)	Title	Publisher	Publication Year	ISBN

**Teaching Policy***Explain how you will organize the course (lectures, laboratories, tutorials, studio work, seminars, etc.)*

There will be one midterm, final examination and three homeworks. Real life data from different sectors of economy will be used to estimate different models. Stata software program will heavily be used.

**Laboratory/Studio Work***Give the number of laboratory/studio hours required per week, if any, to do supervised laboratory/studio work and list the names of the laboratories/studios in which these sessions will be conducted.*

One hour computer application for every week

**Computer Usage***Briefly describe the computer usage and the hardware/software requirements for the course.*

Assignments comprising of data from real life problems are given and use of Stata econometric software is required

**Course Outline**

List the weekly topics to be covered.

Week	Topic(s)
1	Brief Review of Panel Data Econometrics
2	Fixed and Random Effects Models : estimation and evaluation (One way error component model)
3	Fixed effects and Random Effects Models : estimation and evaluation (One way error component model)
4	Fixed effects and Random Effects Models : estimation and evaluation (two way error component model)
5	Fixed effects and Random Effects Models : estimation and evaluation (two way error component model)
6	Test of Hypotheses with panel data: Hausman's specification test, tests for individual and time effects
7	Large N small T / Small N Large T Panel data: estimation and evaluation issues
8	Dynamic Panels
9	Arellono-Bond GMM estimation
10	Non-stationary Panels
11	Panel Unit Root and Cointegration
12	Second Generation Panel Unit Root and Cointegration tests and Cross Section Dependency
13	Application
14	Application

**Grading Policy**

List the assessment tools and their percentages that may give an idea about their relative importance to the end-of-semester grade.

Assessment Tool	Quantity	Percentage	Assessment Tool	Quantity	Percentage	Assessment Tool	Quantity	Percentage
Homework	3	30						
Midterm	1	25						
Final Exam	1	45						

**ECTS Workload**

List all the activities considered under the ECTS.

Activity	Quantity	Duration (hours)	Total Workload (hours)
Attending Lectures ( <i>weekly basis</i> )	14	3	42
Attending Labs/Recitations ( <i>weekly basis</i> )			
Compilation and finalization of course/lecture notes ( <i>weekly basis</i> )	14	1	14
Collection and selection of relevant material ( <i>once</i> )	1	2	2
Self-study of relevant material ( <i>weekly basis</i> )	14	2	28
Take-home assignments	3	4	12
Preparation for quizzes			
Preparation for mid-term exams ( <i>including the duration of the exams</i> )	1	13	13
Preparation of term paper/case-study report ( <i>including oral presentation</i> )			
Preparation of term project/field study report ( <i>including oral presentation</i> )			
Preparation for final exam ( <i>including the duration of the exam</i> )	1	14	14
<b>TOTAL WORKLOAD / 25</b>			<b>125/25</b>

<b>ECTS Credit</b>	<b>5</b>
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**Program Qualifications vs. Learning Outcomes** Consider the program qualifications given below as determined in terms of learning outcomes and acquisition of capabilities for all the courses in the curriculum. Look at the learning outcomes of this course given above. Relate these two using the Likert Scale by marking with X in one of the five choices at the right.

No	Program Qualifications	Contribution				
		0	1	2	3	4
1	To know the fundamental concepts in economics and associated social sciences, and relate these concepts to each other.			X		
2	To know the quantitative and qualitative methods and computer skills necessary for testing hypotheses derived from economic theories for the purpose of contributing towards the solution of economic problems.					X
3	To acquire the necessary knowledge for gathering and processing data, and for building up the scientific research capacity to guide economic policy.					X
4	To specialize in some of the sub-disciplines of economics, and to gain interdisciplinary analytical skills by making connections between those sub-disciplines and other social sciences.				X	
5	To have the ability to question, interpret, and analyze the findings of economic studies.					X
6	To develop the ability to present in writing as a report and verbally as a presentation the knowledge acquired through education.				X	
7	To be able to work in teams, and when necessary to rise up to the challenge individually.		X			
8	To gain life-long learning and critical-thinking skills.		X			
9	To be able to assess one's need for advanced study and to make plans accordingly by using the critical and analytical thinking skills gained during undergraduate studies.		X			
10	To gain the ability to use a language at least at the Level B1 of the European Language Portfolio to follow economic news and developments, and to communicate with colleagues.		X			
11	To maintain scientific, social, and ethical standards when collecting, interpreting, and disseminating economic information, and in application of economic ideas.			X		
12	To be conscious of social and environmental needs.	X				
13	To develop an open-minded attitude towards new ideas and developments.		X			
14	To relate the knowledge gained through education to the cultural and historical characteristics of the society.	X				

Scale for contribution to a qualification: 0-none, 1-little, 2-moderate, 3-considerable, 4-highest