ÇANKAYA UNIVERSITY
Faculty of Economics and Administrative Sciences
Course Definition Form

Part I. Basic Course Information

Department Name	ECONOMICS					**Dept. Numeric Code**		3 1
Course Code	E C O N 4 2 3	**Number of Weekly Lecture Hours**	3	**Number of Weekly Lab/Tutorial Hours**	0	**Number of Credit Hours**		3
Course Web Site	http:// econ423.cankaya.edu.tr					**ECTS Credit**		0 5

Course Name and Other Course Information *This information will appear in the printed catalogs and on the web online catalog.*	
English Name	TIME SERIES ECONOMETRICS
Turkish Name	ZAMAN SERİSİ EKONOMETRİSİ
Mode of Delivery	Face to face
Language of Instruction	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 aims to provide a basic introduction to modern time series analysis. Topics covered include difference equations and their solutions, Autoregressive (AR), Moving Average (MA), and ARMA models, forecasting, unit roots, stationarity, nonstationarity, cointegration, error correction, testing for unit roots and cointegration, and Autoregregressive Distributed Lag (ARDL) models.

Prerequisites (if any) *Give course codes and check all that are applicable.*	1st	2nd	3rd	4th
	☐ Consent of the Instructor	☐ Senior Standing	☐ Give others, if any.	
Co-requisites (if any)	1st	2nd	3rd	4th
Course Type *Check all that are applicable*	☐ Must course for dept.	☐ Must course for other dept.(s)	☒ Elective course for dept.	☐ Elective course for other dept.(s)

Part II. Detailed Course Information

Course Objectives
Maximum 100 words.

Solving difference equations and uncovering implied dynamic structure, specifying and estimating AR, MA, and ARMA time series models to analyze economic time series data, determining the lag order of time series models, Forecasting with univariate time series models, Testing for unit roots and cointegration, specification of Error correction models, analyzing short and long run equilibriums, modelling ARDL models and their relationship with Error Correction models.

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

Upon successful completion of this course, should be able to:
1. solve difference equations and reveal implied dynamic structure
2. specify and estimate AR, MA, ARMA and ARIMA models and use these models for forecasting
3. explain and discuss concepts of stationarity, nonstationarity, cointegration; error correction; common stochastic trends, short and long run equilibrium, Autocorrelation; Partial autocorrelation.
4. use Partial Autocorrelation Function (PACF), Lagrange Multiplier (LM) test, AIC, SIC criterion for model selection
5. test for evidence of unit roots and cointegration.
6. specify cointegrated and Error Correction models
7. specify and estimating ARDL models

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

Author(s)	Title	Publisher	Publication Year	ISBN
Walter Enders	Applied Econometric Time Series	John Wiley and Sons	2010	

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 mid-term examination and three quizzes which are counted as class participation. In addition to these responsibilities, the students who are taking this class are responsible from homework, which can be done by Eviews statistical program.

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.

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

Course Outline
List the weekly topics to be covered.

Week	Topic(s)
1	Brief Review of Statistical Concepts
2	Difference equations
3	AR Models: Basic properties and dynamics
4	MA Models : Basic properties and dynamics
5	ARMA models: Basic properties
6	Stationarity and unit roots: Testing and implications
7	Midterm Exam
8	Auto-regressive Integrated Moving Average Models (ARIMA)
9	Cointegration: Testing and modelling
10	Error Correction models (ECM)
11	ARDL models and ECM
12	Applications with E-Views I
13	Applications with E-Views II
14	Outliers, seasonality in time series analysis

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
Quiz	3	10						
Homework	2	30						
Midterm	1	15						
Final Exam	1	45						

ECTS Workload
List all the activities considered under the ECTS.

Activity	Quantity	Duration (hours)	Total Workload (hours)
Attending Lectures (*weekly basis*)	14	3	42
Attending Labs/Recitations (*weekly basis*)			
Compilation and finalization of course/lecture notes (*weekly basis*)	14	1	14
Collection and selection of relevant material (*once*)	1	2	2
Self study of relevant material (*weekly basis*)	14	2	28
Take-home assignments	2	3	6
Preparation for quizzes	3	2	6
Preparation for mid-term exams (*including the duration of the exams*)	1	13	13
Preparation of term paper/case-study report (*including oral presentation*)			
Preparation of term project/field study report (*including oral presentation*)			
Preparation for final exam (*including the duration of the exam*)	1	14	14
TOTAL WORKLOAD **/** 25			125/25
ECTS Credit			**5**

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