

F. Course Description					
Course Name		Time Series Analysis			
Course Language		Turkish			
Course Level		Associate Degree ()	First Cycle (x)	Second Cycle ()	Third Cycle ()
Mode of Delivery					
Formal (x)		Distance Learning ()		Others ()	
Course Type		Course Unit Code		Course Code	
Required ()	Elective (x)				
Theory (Hours)	Application (Hours)	Total	Semester	National Credits	ECTS
3	-	3	Spring	3	
Course Objectives		This course introduces students to Time series Analysis and equips them with tools and methods to study, analyze and model time series.			
Course Content		Autocovariance, Autocorrelation, Stationary and Nonstationary time series, Box-Jenkins Methodology - ARMA and ARIMA Models, Model Selection, Parameter Estimation, Model fitting, Forecasting, Unit root tests			
Pre-requisites		Mathematics 1 -2, Econometrics 1-2, statistics 1-2			
Recommended Elective Courses					
Course Learning Outcomes		<ol style="list-style-type: none"> 1. Defines distinctive features of time series data. 2. Could construct models which can explain the behavior of time series. 3. Has the ability to test economic hypothesis and determine the characteristics of macroeconomic or financial time series by utilizing time series techniques. 4. Could model any time series (especially economic time series) and perform forecasting by utilizing an statistical software. 5. Learns time series modeling techniques 			
Course Coordinator					
Course Lecturer(s)		Yrd. Doç. Dr. Ünal TÖNGÜR			
Course Assistants					
Teaching Methods					
(x) Oral Presentation	() Case Study	(x) Computer assisted			
(x) Discussion	() Drama	() Laboratory			
(x) Problem Solving	() Invention	()			
() Experiment	() Project	()			
Course Notes / Textbooks		<ol style="list-style-type: none"> 1. Akdi, Yılmaz (2003), Zaman Serileri Analizi, Bıçaklar Kitapevi, Ankara 2. Sevüktekin M., Nargeleçekenler, M. Zaman Serisi Analizi 3. Walter Enders, Applied Econometric Time Series (İkinci Baskı), Wiley. 4. Brockwell and Davis, Introduction to Time Series and Forecasting 			
Evaluation System					
() Direct Conversion System		X Relative Assessment			
		Requirements	Number	Percentage of Grade	
		Attendance	15		
		Quizzes			
		Midterm Exam(s)		30%	



Measurement and Evaluation System	Homework(s) / Seminar(s)		
	Term Assignment(s) / Project		
	Application (Laboratory, Atelier , Field Work, Problem Based Learning- PBL Reports)		
	Others (.....)		
	Final Exam	1	70%
	Total		% 100

Distribution of Topics By Weeks		
Weeks	Topics	Preparatory Work
1	Introduction	Related chapters in references
2	Autocorrelation (ACF) and Partial Autocorrelation (PACF) functions	Related chapters in references
3	Autoregressive Processes (AR)	Related chapters in references
4	Autoregressive Processes (AR) - Continues	Related chapters in references
5	Moving Average Processes (MA)	Related chapters in references
6	Moving Average Processes (MA) - Continues	Related chapters in references
7	Autoregressive Moving Average Processes (ARMA)	Related chapters in references
8	Autoregressive Integrated Moving Average Processes (ARIMA)	Related chapters in references
9	Box Jenkins Methodology	Related chapters in references
10	Model Determination	Related chapters in references
11	Parameter estimation	Related chapters in references
12	Model fitting and Model selection criteria	Related chapters in references
13	Forecasting	Related chapters in references
14	Stationarity and Unit Root	Related chapters in references
15	Dickey Fuller, ADF unit Root tests	Related chapters in references

Program Outcomes	Course Learning Outcomes*									
	LO1	LO2	LO3	LO4	LO5	LO6	LO7	LO8	LO9	LO10
PO 01					1					
PO 02	1	1	1	1	1					
PO 03										
PO 04										
PO 05										
PO 06	5	5	5	5	5					
PO 07										
PO 08			1	1						
PO 09										
PO 10			1	1						
PO 11			1	1						
PO 12				1						
PO 13										
PO 14										
PO 15										
PO 16										
PO 17										
PO 18										

* 1: Low

2: Lowest

3: Average

4: High

5: Highest



ECTS of the Course Based on Learning, Teaching and Evaluation Activities (Average Hours)				
Activities	Number	Preparatory Work	Duration	Total Workload
Theory	14	1	3	56
Applied Course				
Homework(s) / Seminar(s)	10	1		10
Term Assignment / Project	1	20		20
Application (Laboratory, Atelier, Field, Problem Based Learning - PBL)				
Other Learning Activities				
Quizzes				
Midterm Exam(s)	1	20	1	21
Final Exam	1	30	1	31
Total Workload (Hours)				148
Rounding [Total Workload (hours) / Weekly Workload (30)] = ECTS				5