AYDIN ADNAN MENDERES UNIVERSITY
COURSE INFORMATION FORM

Course Title		Time Series Analysis						
Course Code		BİS527		Couse Level		Second Cycle (Master's Degree)		
ECTS Credit	6	Workload	152 *(Hours)*	Theory	2	Practice	2	Laboratory	0
Objectives of the Course		In this course you will develop a sound understanding of the time domain properties and common models for stationary and non-stationary time series in discrete time and will be able to use SPSS package to perform appropriate analyses.						
Course Content		Time series methods, the periodogram, basic theory of stationary processes, linear filters, spectral analysis, ARIMA models, forecasting, smoothing, autoregression and time series regression models.						
Work Placement		N/A						
Planned Learning Activities and Teaching Methods				Explanation (Presentation), Project Based Study, Individual Study				
Name of Lecturer(s)		Prof. İmran KURT ÖMÜRLÜ, Prof. Mevlüt TÜRE						

Assessment Methods and Criteria

Method	Quantity	Percentage (%)
Midterm Examination	1	40
Final Examination	1	60

Recommended or Required Reading

1	Akdi, Y. (2010). Zaman serileri analizi:(birim kökler ve kointegrasyon). Gazi Kitabevi.
2	Brockwell, P. J., Davis, R. A., & Calder, M. V. (2002). Introduction to time series and forecasting (Vol. 2). New York: springer.
3	Shumway, R. H., & Stoffer, D. S. (2017). Time series analysis and its applications: with R examples. Springer.
4	Kutlar, Aziz (2000) Zaman Serileri, Gazi yayın. Ankara

Week	Weekly Detailed Course Contents	
1	Theoretical	Time series definition and general features
	Practice	Application with package programs
2	Theoretical	Time series analysis and its stages
	Practice	Application with package programs
3	Theoretical	Separation of time series into its components
	Practice	Application with package programs
4	Theoretical	Non-stationary time series
	Practice	Application with package programs
5	Theoretical	Stationary time series
	Practice	Application with package programs
6	Theoretical	Testing stationarity, unit root test
	Practice	Application with package programs
7	Theoretical	Stationarizing techniques in time series
	Practice	Application with package programs
8	Intermediate Exam	Midterm exam
9	Theoretical	Autoregressive models
	Practice	Application with package programs
10	Theoretical	Moving average models
	Practice	Application with package programs
11	Theoretical	Autoregressive moving average models-I
	Practice	Application with package programs
12	Theoretical	Autoregressive moving average models-II
	Practice	Application with package programs
13	Theoretical	Autoregressive integrated moving average models-I
	Practice	Application with package programs
14	Theoretical	Autoregressive integrated moving average models-II

14	Practice	Application with package programs
15	Theoretical	Literature review and discussion
	Practice	Literature review and discussion
16	Final Exam	Final exam

Workload Calculation

Activity	Quantity	Preparation	Duration	Total Workload
Lecture - Theory	14	0	2	28
Lecture - Practice	14	0	2	28
Assignment	1	10	0	10
Quiz	14	2	1	42
Midterm Examination	1	20	2	22
Final Examination	1	20	2	22
			Total Workload (Hours)	152
			[Total Workload (Hours) / 25*] = **ECTS**	6

25 hour workload is accepted as 1 ECTS

Learning Outcomes

1	To be able to familiar with properties of the major types of time series observed in discrete time
2	To be able to identify appropriate models for such series
3	To be able to estimate these models using SPSS software package.
4	To be able to comprehend how to diagnose model adequacy
5	To be able to comprehend linear prediction for a range of time series models
6	To be able to make substantive analysis of several time series and write a major report presenting one of these analyses

Programme Outcomes *(Biostatistics Master)*

1	To be able to understand the interdisciplinary interaction releated with biostatistics.
2	to be able to use Theoretical and practical knowledge at the level of expertise.
3	To be able to nterpret the information by integrating information from different disciplines and create new information
4	To be able to nalyze the problems encountered by using research methods
5	to be able to conduct a study as an independent specialist
6	To be able to formulate solutions for complex unpredictable problems encountered by developing new approaches and taking responsibility.
7	To be able to resolve problems in environments that require leadership.
8	To be able to evaluate and direct knowledge and skills with a critical approach at the level of expertise.
9	To be able to to give statistical advise at the begining stages of preparing health related projects
10	To be able to get the knowledge and the ability of using statistical packages

Contribution of Learning Outcomes to Programme Outcomes *1:Very Low, 2:Low, 3:Medium, 4:High, 5:Very High*

	L1	L2	L3	L4	L5	L6
P1	3	3	1	3	3	3
P2	4	5	5	4	3	4
P3	4	4	4	4	2	4
P4	4	3	4	3	3	3
P5	4	5	5	4	4	5
P6	3	4	4	4	3	4
P7	3	4	5	4	3	4
P8	4	4	5	3	4	5
P9	4	5	5	4	4	3
P10	2	4	5	4	4	5