AYDIN ADNAN MENDERES UNIVERSITY
COURSE INFORMATION FORM

Course Title		Applied Multivariate Statistical Methods-I					
Course Code		BİS503		Couse Level	Second Cycle (Master's Degree)		
ECTS Credit	6	Workload	152 *(Hours)*	Theory	2	Practice	2	Laboratory	0
Objectives of the Course		Providing theoretical and practical knowledge about multivariate statistical methods					
Course Content		Matrices algebra, multivariate normal distribution, inferences in multivariate means and linear models, principle components, factor analysis, discriminant analysis, culuster analysis.					
Work Placement		N/A					
Planned Learning Activities and Teaching Methods			Explanation (Presentation)				
Name of Lecturer(s)		Prof. İmran KURT ÖMÜRLÜ					

Assessment Methods and Criteria

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

Recommended or Required Reading

1	Bilodeau, M., & Brenner, D. (2008). Theory of multivariate statistics. Springer Science & Business Media.
2	Albayrak, A. S. (2006). Uygulamalı çok değişkenli istatistik teknikleri. Asil yayın dağıtım.
3	Alpar, R. (2011). Çok Değişkenli İstatistiksel Yöntemler, Üçüncü Baskı, Detay Yayıncılık.
4	Sharma, S. (1995). Applied multivariate techniques. John Wiley & Sons, Inc..

Week	Weekly Detailed Course Contents	
1	Theoretical	Matrices algebra
	Practice	Applications with package programs
2	Theoretical	Multivariate normal distribution
	Practice	Applications with package programs
3	Theoretical	Multivariate normal distribution
	Practice	Applications with package programs
4	Theoretical	Inferences in multivariate means and linear models
	Practice	Applications with package programs
5	Theoretical	Inferences in multivariate means and linear models
	Practice	Applications with package programs
6	Theoretical	Principle component analysis
	Practice	Applications with package programs
7	Theoretical	Principle component analysis
	Practice	Applications with package programs
8	Intermediate Exam	Midterm exam
9	Theoretical	Factor analysis
	Practice	Applications with package programs
10	Theoretical	Factor analysis
	Practice	Applications with package programs
11	Theoretical	Discriminant analysis
	Practice	Applications with package programs
12	Theoretical	Discriminant analysis
	Practice	Applications with package programs
13	Theoretical	Cluster analysis
	Practice	Applications with package programs
14	Theoretical	Cluster analysis
	Practice	Applications with package programs
15	Theoretical	Literature review and discussion

15	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 ale to comprehend the concept and terminolgy of multivariate methods
2	To be able to comprehend and apply matrices and vectors algebra for multivariate problems
3	To be able to coprehend multivariate normal distribution
4	To be able to compare multivariate means
5	To be able to comprehend and apply principle components analasis, factor analasis, discriminant analasis and cluster analysis

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
P1	4	4	4	5	4
P2	5	4	5	5	5
P3	4	4	4	5	5
P4	4	4	4	5	5
P5	4	4	4	5	4
P6	4	4	4	5	5
P7	4	4	4	5	4
P8	4	4	4	5	5
P9	4	4	4	5	5
P10	4	5	4	5	5