AYDIN ADNAN MENDERES UNIVERSITY
COURSE INFORMATION FORM

Course Title		Experimental Design					
Course Code		BİS507		Couse Level	Second Cycle (Master's Degree)		
ECTS Credit	2	Workload	48 *(Hours)*	Theory	1	Practice	0	Laboratory	0
Objectives of the Course		In this course, the scientific approaches and fundamental principles of statistical methodology are introduced. Also, modeling for research and development activities are studied.					
Course Content		Basics of knowledge production and problem solving. Definition of scientific method and research. Research process and modeling. Fundamental statistical principals. General Linear Model and its analysis Experimental models and basic experimental designs. Factorial experimental models.					
Work Placement		N/A					
Planned Learning Activities and Teaching Methods			Explanation (Presentation), Demonstration, Individual Study				
Name of Lecturer(s)		Prof. Mevlüt TÜRE					

Assessment Methods and Criteria

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

Recommended or Required Reading

1	Montgomery, D. C., (2000), Design and Analysis of Experiments, Fifth Edition, John Wiley & Sons, New York, NY.
2	Whitehead, J. (1997). The design and analysis of sequential clinical trials. John Wiley & Sons.
3	Mead,R. (1990). The Design of Experiments. Statistical principles for practical application. Cambridge Univ. Pres.Cambridge.
4	Keppel, G. (1991). Design and analysis: A researcher's handbook. Prentice-Hall, Inc.

Week	Weekly Detailed Course Contents	
1	Theoretical	Introduction to experimental design
2	Theoretical	Stages of experiment setup
3	Theoretical	Experimental error and actions to reduce the error
4	Theoretical	Analysis of variance and its assumptions
5	Theoretical	Analysis of the sum of squares into components
6	Theoretical	Single factor experiments
7	Theoretical	Random blocks design
8	Intermediate Exam	Midterm exam
9	Theoretical	Completed random blocks design
10	Theoretical	Random incomplete blocks design
11	Theoretical	Latin square design
12	Theoretical	Greko-Latin square design
13	Theoretical	Youden square design
14	Theoretical	Multifactorial experiments, 2^k and 3^k factorial experiments
15	Theoretical	Literature review and discussion
16	Final Exam	Final exam

Workload Calculation

Activity	Quantity	Preparation	Duration	Total Workload
Lecture - Theory	14	0	1	14
Individual Work	1	0	10	10
Midterm Examination	1	10	2	12

Final Examination	1	10	2	12
		Total Workload (Hours)		48
		[Total Workload (Hours) / 25*] = **ECTS**		2

*25 hour workload is accepted as 1 ECTS

Learning Outcomes

1	To learn the importance and aim of experimental design.
2	To learn the experimental design methods.
3	Deciding which design to apply
4	To be able to make statistical analysis of experimental results
5	To be able to make experiment interpretation and analysis with package programs

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	L5
P1	5	3	5
P2	5	4	4
P3	4	4	4
P4	5	4	4
P5	4	4	5
P6	4	4	4
P7	4	5	4
P8	4	4	4
P9	4	4	4
P10	4	4	4