DEPARTMENT OF MECHATRONICS

Course Details					
Code			**Academic Year**		**Semester**
MAT204			2		Spring
Title			**T** **A** **L**		**ECTS**
Statistical Methods of Data Analysis			2 2 1		6

Language	German				
Level	**Undergraduate**	x	**Graduate**		**Postgraduate**
Department / Program	Mechatronics				
Forms of Teaching and Learning	Face to face				
Course Type	**Compulsory**	x	**Elective**		
Objectives	Introduction to Operations Research II and Stochastic Models				
Content	Basics of probability, discrete and continuous random variables, jointly distributed random variables, basics of descriptive statistics, inductive statistics, point estimation, confidence intervals, hypothesis tests, paired t-Test, analysis of variance, regression, goodness of fit tests, nonparametric tests				
Prerequisites	-				
Coordinator	-				
Lecturer(s)	Asst. Prof. Dr. Esra Ataç Baş				
Assistant(s)	Mehmet Ali Taş				
Work Placement	-				

Recommended or Required Reading	
Books / Lecture Notes	-
Other Sources	-

Additional Course Material	
Documents	-
Assignments	-
Exams	-

Course Composition		
Mathematics und Basic Sciences	70	%
Engineering	30	%
Engineering Design		%
Social Sciences		%
Educational Sciences		%
Natural Sciences		%

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Health Sciences		%
Expert Knowledge		%

Assessment

Activity	Count	Percentage (%)
Midterm Exam	1	20
Quiz	1	20
Assignments		
Attendance		
Recitations		
Projects		
Final Exam	1	60
Total		**100**

ECTS Points and Work Load

Activity	Count	Duration	Work Load (Hours)
Lectures	14	2	28
Self-Study	14	2	28
Assignments			
Presentation / Seminar Preparation			
Midterm Exam	1	2	2
Recitations	14	2	28
Laboratory	14	1	14
Projects			
Final Exam	1	2	2
Total Work Load			**102**
ECTS Points (Total Work Load / Hour)			**6**

Learning Outcomes

1	Understanding the basics of probability
2	Understanding discrete and continuous random variables
3	Understanding jointly distributed random variables and limit theorems in probability
4	Understanding the basics of descriptive statistics
5	Understanding the basics of point estimation, confidence intervals, hypothesis testing
6	Understanding the basics of analysis of variance, regression, goodness of fit tests and nonparametric tests

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Weekly Content	
1	Basics of probability
2	Discrete random variables
3	Continuous random variables
4	Continuous random variables
5	Jointly distributed random variables
6	Jointly distributed random variables
7	Descriptive statistics
8	Point estimation, confidence intervals
9	Midterm Exam
10	Hypothesis tests
11	Hypothesis tests, paired t-test
12	Analysis of variance, regression
13	Goodness of fit tests
14	Nonparametric tests
15	Preparation for final exam

Contribution of Learning Outcomes to Program Objectives (1-5)

	P1	P2	P3	P4	P5	P6	P7	P8	P9	P10
1	5	5	3	3	5	5	5	5	1	1
2	5	5	3	3	5	5	5	5	1	1
3	5	5	3	3	5	5	5	5	1	1
4	5	5	3	3	5	5	5	5	1	1
5	5	5	3	3	5	5	5	5	1	1
6	5	5	3	3	5	5	5	5	1	1

Contribution Level	1: Low 2: Low-intermediate 3: Intermediate 4: High 5: Very High
https://obs.tau.edu.tr/oibs/bologna/progLearnOutcomes.aspx?lang=en&curSunit=202	
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