

DEPARTMENT OF MOLECULAR BIOTECHNOLOGY  
COURSE SYLLABUS

Course Details				
<b>Code</b>	<b>Academic Year</b>			<b>Semester</b>
MBT458	4			8
<b>Title</b>	<b>T</b>	<b>A</b>	<b>L</b>	<b>ECTS</b>
Biostatistics	2	2	-	6
<b>Language</b>	German			
<b>Level</b>	<b>Undergraduate</b>	X	<b>Graduate</b>	<b>Postgraduate</b>
<b>Department / Program</b>	Molecular Biotechnology			
<b>Forms of Teaching and Learning</b>	Face-to-face			
<b>Course Type</b>	<b>Compulsory</b>		<b>Elective</b>	X
<b>Objectives</b>	Being able to apply statistical methods in biology			
<b>Content</b>	Random variables, discrete and continuous probability distributions, hypothesis tests			
<b>Prerequisites</b>	-			
<b>Coordinator</b>	-			
<b>Lecturer(s)</b>	Assist. Prof. Dr. Neşe Aral			
<b>Assistant(s)</b>	RA Semih Alpsoy			
<b>Work Placement</b>	-			
Recommended or Required Reading				
<b>Books / Lecture Notes</b>	Angewandte Statistik, Werner Timischl, Springer, 2013			
<b>Other Sources</b>	-			
Additional Course Material				
<b>Documents</b>	-			
<b>Assignments</b>	-			
<b>Exams</b>	-			
Course Composition				
<b>Mathematics und Basic Sciences</b>	70			%
<b>Engineering</b>	-			%
<b>Engineering Design</b>	-			%
<b>Social Sciences</b>	-			%
<b>Educational Sciences</b>	-			%
<b>Natural Sciences</b>	-			%
<b>Health Sciences</b>	30			%

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Expert Knowledge	-			%
<b>Assessment</b>				
<b>Activity</b>	<b>Count</b>		<b>Percentage (%)</b>	
Midterm Exam	1		40	
Quiz	-		-	
Assignments	-		-	
Attendance	-		-	
Recitations	-		-	
Projects	-		-	
Final Exam	1		60	
			<b>Total</b>	<b>100</b>
<b>ECTS Points and Work Load</b>				
<b>Activity</b>	<b>Count</b>	<b>Duration</b>	<b>Work Load (Hours)</b>	
Lectures	13	4	52	
Self-Study	13	5	65	
Assignments	-	-	-	
Presentation / Seminar Preparation	-	-	-	
Midterm Exam	1	10	10	
Recitations	-	-	-	
Laboratory	-	-	-	
Projects	-	-	-	
Final Exam	1	10	10	
			<b>Total Work Load</b>	<b>137</b>
			<b>ECTS Points (Total Work Load / Hours)</b>	<b>6</b>
<b>Learning Outcomes</b>				
1	Being able to solve and interpret statistical problems.			
2	Being able to understand statistical methods in scientific literature.			
<b>Weekly Content</b>				
1	Introduction to probability theory, random trials			
2	Conditional probability, Bayes' Rule, Combinatorics			
3	Graphical Presentation of Data			
4	Central Tendency, Variance			
5	Discrete Probability Distributions			
6	Continuous Probability Distributions			
7	Parameter Estimation and Confidence Intervals			

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8	Hypothesis Testing I
9	Hypothesis Testing II
10	Correlation and Linear Regression Analysis
11	Analysis of Variance
12	Survival Analysis
13	Computer Applications

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

	P1	P2	P3	P4	P5	P6	P7	P8
1	4	5	5	5	5	5	1	-
2	5	5	5	5	4	5	1	-

**Contribution Level** 1: Low 2: Low-intermediate 3: Intermediate 4: High 5: Very high

**OBS LINK:**

**Compiled by:** Assist. Prof. Dr. Neşe Aral Sözüner

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