

**DEPARTMENT OF MOLECULAR BIOTECHNOLOGY
COURSE SYLLABUS**

Course Details							
Code				Academic Year	Semester		
MBT474				4	8		
Title				T	A	L	ECTS
Population Genetics				3	2	-	6
Language	German						
Level	Undergraduate	X	Graduate	Postgraduate			
Department / Program	Molecular Biotechnology						
Forms of Teaching and Learning	Face-to-Face						
Course Type	Compulsory		Elective		X		
Objectives	Having an understanding of basic principles and applications of population genetics.						
Content	Hardy-Weinberg Laws and their applications, genetic drift and effective populations size, population structure, natural selection, molecular evolution						
Prerequisites	-						
Coordinator	-						
Lecturer(s)	Undefined						
Assistant(s)	-						
Work Placement	-						
Recommended or Required Reading							
Books / Lecture Notes	Population Genetics, 2009. Matthew B. Hamilton. Wiley-Blackwell, UK.						
Other Sources							
Additional Course Material							
Documents							
Assignments							
Exams							
Course Composition							
Mathematics and Basic Sciences				%			
Engineering				%			
Engineering Design				%			
Social Sciences				%			

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Educational Sciences		%
Natural Sciences	100	%
Health Sciences		%
Expert Knowledge		%

Assessment

Activity	Count	Percentage (%)
Midterm Exam	1	40
Quiz	0	0
Assignments	0	0
Attendance	0	0
Recitations	0	0
Projects	0	0
Final Exam	1	60
Total		100

ECTS Points and Work Load

Activity	Count	Duration	Work Load (Hours)
Lectures	14	3	42
Self-Study	14	2	28
Assignments	0	0	0
Presentation / Seminar Preparation	0	0	0
Midterm Exam	1	15	15
Recitations	14	2	28
Laboratory	0	0	0
Projects	0	0	0
Final Exam	1	15	15
Total Work Load			128

ECTS Points (Total Work Load / Hour) **6**

Learning Outcomes

1	To be able to understand effects of mutation, drift, selection and population size on the genetic changes in a population.
2	Being able to make statistical analyses of data encountered in population genetics and phylogenetics.

Weekly Content

1	Genotype frequencies: Hardy-Weinberg Laws and their applications.
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2	Fixation index
3	Genetic drift and effective population size.
4	Models of natural selection
5	Molecular evolution
6	Quantitative trait variation and evolution

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

	P1	P2	P3	P4	P5	P6	P7
1	5	5	5	5	3	5	0
2	5	5	5	5	3	5	0

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=5707>

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