

DEPARTMENT OF MOLECULAR BIOTECHNOLOGY
COURSE SYLLABUS

Course Details					
Code				Academic Year	Semester
MBT201				2	3
Title	T	A	L	ECTS	
Cell Biology	3	1	1	6	
Language	German				
Level	Undergraduate	X	Graduate	Postgraduate	
Department / Program	Molecular Biotechnology				
Forms of Teaching and Learning	Face-to-face				
Course Type	Compulsory	X	Elective		
Objectives	The students should gain a basic understanding of the structure and organization of animal and plant cells. This includes the cell organelles, the organization and packaging of the genetic information, its transmission via meiosis and mitosis, and protein and intramembrane transport. This should serve to better understand the use of eukaryotic systems in molecular biotechnology				
Content	Structure and mechanisms of cell organelles and their organization Mitosis and meiosis to transmit genetic information Methods of studying the cell				
Prerequisites	-				
Coordinator	Res. Asst. Dr. Betül Uluca				
Lecturer(s)	Res. Asst. Dr. Betül Uluca				
Assistant(s)	Res. Asst. Ogün Morkoç				
Work Placement	-				
Recommended or Required Reading					
Books / Lecture Notes	Molekularbiologie der Zelle, Alberts et al., Wiley VCH Molekulare Zellbiologie, Lodish et al., Spektrum Akademischer Verlag				
Other Sources	-				
Additional Course Material					
Documents	-				
Assignments	-				
Exams	-				
Course Composition					
Mathematics und Basic Sciences				%	
Engineering	10			%	
Engineering Design				%	

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Social Sciences			%
Educational Sciences			%
Natural Sciences	90		%
Health Sciences			%
Expert Knowledge	100		%
Assessment			
Activity	Count		Percentage (%)
Midterm Exam	1		25
Quiz	-		-
Assignments	4		20
Attendance	-		-
Recitations	1		10
Projects	-		-
Final Exam	1		45
		Total	100
ECTS Points and Work Load			
Activity	Count	Duration	Work Load (Hours)
Lectures	13	3	39
Self-Study	13	6	78
Assignments	4	3	12
Presentation / Seminar Preparation	-	-	-
Midterm Exam	1	2	2
Recitations	13	1	13
Laboratory	13	1	13
Projects	-	-	-
Final Exam	1	2	2
		Total Work Load	159
		ECTS Points (Total Work Load / Hour)	6
Learning Outcomes			
1	Understanding the underlying structure and mechanisms of animal and plant cells		
2	Understanding cell division and gene transfer mechanism through meiosis		
Weekly Content			
1	Introduction to the cell: Prokaryotes and eukaryotes and cell chemistry Storage of genetic information in the cell		
2	Structure and functions of the cell membrane - cell wall		
3	Cell compartmentalization and protein sorting		

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4	Cell compartmentalization and protein sorting
5	Functions of mitochondria and chloroplasts
6	Cell signaling
7	The cytoskeleton
8	Cell cycle - mitosis - control of cell division
9	Cell division by meiosis
10	Degradation of proteins and organelles, programmed cell death
11	Cell junctions and the extracellular matrix
12	Molecular basis of stem cells and cancer
13	Techniques and methods for examining cells

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

	P1	P2	P3	P4	P5	P6	P7
1	2	3	3	-	-	2	-
2	2	3	3	-	-	2	-

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>

Compiled by: Res. Asst. Dr. Betül Uluca

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