DEPARTMENT OF MOLECULAR BIOTECHNOLOGY
COURSE SYLLABUS

Course Details				
Code	**Academic Year**			**Semester**
BIO111	1			1
Title	**T**	**A**	**L**	**ECTS**
Biology	2	1	2	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	Starting with an introduction to the eukaryotic cell, students learn fundamentals of the structure and diversity of higher animals and plants with an emphasis on structures, tissues, and organs and their structuring principles					
Content	1) Introduction to micro- and cell biology 2) Cellular bases of life 3) Chemical elements of the structure and function of plant and animal cells 4) Structure and function of cell membrane 5) Cellular energy production: photosynthesis, cellular respiration 6) Control of cellular activity 7) Cell reproduction 8) Genetic basis of life					
Prerequisites	-					
Coordinator	-					
Lecturer(s)	-					
Assistant(s)	Research Assistant Semih Alpsoy, Research Assistant Rumeysa Fayetörbay					
Work Placement	-					

Recommended or Required Reading	
Books / Lecture Notes	1) Biology (Textbook) N. A. Campbell, J. B. Reece, L. A. Urry, M. L. Cain, S. A. Wasserman, P. V. Minorsky, R. B. Jackson; Pearson Education, Inc.; 2008. 2) Biology, Neil A. Campbell /Jane B. Reece, Pearson Publishing 3) Biology, Purves, 2012, Jürgen Markl (ed.) Springer International Publishing
Other Sources	

Additional Course Material	
Documents	
Assignments	

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Exams		
Course Composition		
Mathematics and Basic Sciences		%
Engineering		%
Engineering Design		%
Social Sciences		%
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	13	2	26
Self-Study	13	6	78
Assignments	1	10	10
Presentation / Seminar Preparation	0	0	0
Midterm Exam	1	2	2
Recitations	13	1	13
Laboratory	13	2	26
Projects	0	0	0
Final Exam	1	2	2
		Total Work Load	**157**
		ECTS Points (Total Work Load / Hours)	**6**

Learning Outcomes

1	The student defines basic terms of biology.

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2	The student explains the contribution of physical and chemical principles to the field of biology.
3	The student defines the building blocks of living organisms, the cell architecture and its organelles including their functions.
4	The student explains the basic principles that ensure the operation of living systems on molecular, cellular, organ and organismal levels.
5	The student defines the basic mechanisms that govern the transmission of traits and the emergence of species.
6	The student can transfer biological principles to other fields of natural sciences.

Weekly Content	
1	Introduction to biology and its key issues - Chemical fundamentals of life
2	Water and life/Carbon and the molecular diversity of life
3	Structure and function of biological macromolecules
4	Cells and their organelles/Structure and function of biological membranes
5	Introduction to metabolism/Cellular respiration and fermentation
6	Photosynthesis
7	Cell cycle, mitosis, meiosis
8	Transmission of genetic traits/From gene to protein
9	Regulation of gene expression
10	Viruses/Genetic engineering in biotechnology
11	Evolution theory/Emergence of species
12	Introduction to plants and plant physiology
13	Introduction to animals and animal physiology

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

	P1	P2	P3	P4	P5	P6	P7
1	3	3	0	0	0	0	5
2	3	3	3	0	0	0	5
3	3	3	0	0	0	0	5
4	3	3	0	0	0	0	5
5	3	3	0	0	0	0	5
6	3	3	5	0	0	5	5

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:	Research Assistant Dr. Betül Uluca
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