

# METHODS IN MOLECULAR BIOLOGY

1	Course Title:	METHODS IN MOLECULAR BIOLOGY
2	Course Code:	BIO5407
3	Type of Course:	Optional
4	Level of Course:	Second Cycle
5	Year of Study:	1
6	Semester:	1
7	ECTS Credits Allocated:	6.00
8	Theoretical (hour/week):	3.00
9	Practice (hour/week):	0.00
10	Laboratory (hour/week):	0
11	Prerequisites:	None
12	Language:	Turkish
13	Mode of Delivery:	Face to face
14	Course Coordinator:	Prof. Dr. FERDA ARI
15	Course Lecturers:	
16	Contact information of the Course Coordinator:	Prof Dr. Ferda ARI Bursa Uludağ Üniversitesi, Fen Edebiyat Fakültesi, Biyoloji Bölümü 16059 Nilüfer/BURSA Tlf: 0 224 294 1822 e-posta: ferdaoz@uludag.edu.tr
17	Website:	
18	Objective of the Course:	The aim of this course is to increase students' basic principles of methods commonly used in molecular biology and knowledge about equipment and to teach laboratory conditions.
19	Contribution of the Course to Professional Development:	This course will provide students with the opportunity to apply the necessary knowledge and molecular techniques in areas such as molecular biology, biochemistry and genetics.
20	Learning Outcomes:	
	1	Recognizes molecular biology laboratory equipment
	2	Understands the disintegration and purification of macromolecules
	3	Understand the application of spectrophotometric methods
	4	Understands chromatographic methods
	5	Understand the isolation and working principles of nucleic acids such as DNA and RNA
	6	Understand PCR and gene analysis
	7	Comprehend ELISA and blotting methods
	8	Understand epigenetic analysis
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	10	
21	Course Content:	
	<b>Course Content:</b>	
Week	Theoretical	Practice
1	Molecular biology basic laboratory rules and laboratory equipment	
2	Basic Macromolecules	

3	Fragmentation Methods used in Molecular Biology	
4	Separation Methods Used in Molecular Biology	
5	Spectrophotometric Methods	
6	Chromatographic methods I	
7	Chromatographic methods II	
8	Purification and isolation of macromolecules	
9	Enzymatic Analysis	
10	ELISA and blotting techniques	
11	Cell Culture and its usage in molecular biology	
12	Analysis methods and marking of nucleic acids	
13	PCR and gene analysis methods	
14	Epigenetic analysis	

22	Textbooks, References and/or Other Materials:	Basic Methods in Molecular Biology (Leonard G. Davis, Mark D. Dibner and James F. Battey) • Analytical Techniques in Biochemistry and Molecular Biology (Rajan Katoch) • General Techniques of Cell Culture (Maureen A. Harrison) • Current reviews and publications
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Activites		Number	Duration (hour)	Total Work Load (hour)
Midterm Exam	0	0.00		
Theoretical Quiz	0	0.00	3.00	42.00
Practicals/Labs	0	0.00	0.00	0.00
Home work project	1	14.00		
Self study and preperation	1	14.00	6.00	84.00
Final Exam	1	60.00		
Homeworks	3	15.00		45.00
Total Projects	12	100.00	0.00	0.00
Contribution of Term (Year) Learning Activities to		40.00		
Field Studies	0	0.00	0.00	0.00
Midterm exams	0	0.00	0.00	0.00
Contribution of Final Exam to Success Grade		60.00		
Others	0	0.00	0.00	0.00
Final Exams	1	10.00		10.00
Measurement and Evaluation Techniques Used in the		The system of relative evaluation is applied		
Total Work Load				181.00
Total work load/30 hrs				6.03
24	<b>ECTS/WORK LOAD TABLE</b>			
ECTS Credit of the Course				6.00

25	CONTRIBUTION OF LEARNING OUTCOMES TO PROGRAMME QUALIFICATIONS															
	PQ1	PQ2	PQ3	PQ4	PQ5	PQ6	PQ7	PQ8	PQ9	PQ10	PQ11	PQ12	PQ13	PQ14	PQ15	PQ16
ÖK1	4	4	4	3	4	4	5	3	3	0	0	0	0	0	0	0
ÖK2	2	2	2	2	2	2	3	2	2	0	0	0	0	0	0	0
ÖK3	3	2	4	2	2	2	3	2	2	0	0	0	0	0	0	0
ÖK4	3	2	4	2	2	2	3	2	2	0	0	0	0	0	0	0

ÖK5	3	2	4	2	2	2	2	2	2	0	0	0	0	0	0	0
ÖK6	3	2	4	2	2	2	2	2	2	0	0	0	0	0	0	0
ÖK7	2	1	3	1	1	1	1	1	1	0	0	0	0	0	0	0
ÖK8	2	1	3	1	1	1	1	1	1	0	0	0	0	0	0	0
LO: Learning Objectives    PQ: Program Qualifications																
Contribution Level:	1 very low			2 low			3 Medium			4 High			5 Very High			