MOLECULAR BIOLOGY IN IMMUNOLOGY

1	Course Title:	MOLECULAR BIOLOGY IN IMMUNOLOGY	
2	Course Code:	TİM6016	
3	Type of Course:	Optional	
4	Level of Course:	Third Cycle	
5	Year of Study:	1	
6	Semester:	2	
7	ECTS Credits Allocated:	6.00	
8	Theoretical (hour/week):	1.00	
9	Practice (hour/week):	4.00	
10	Laboratory (hour/week):	0	
11	Prerequisites:	None	
12	Language:	Turkish	
13	Mode of Delivery:	Face to face	
14	Course Coordinator:	Prof. Dr. BARBAROS ORAL	
15	Course Lecturers:	-	
16	Contact information of the Course Coordinator:	Uludağ Üniversitesi, Tıp Fakültesi, Tıbbi Mikrobiyoloji Anabilim Dalı, İmmünoloji Bilim Dalı, 16059, Nilüfer, BURSA E-posta: oralb@uludag.edu.tr Tel: 2954114	
17	Website:		
18	Objective of the Course:	The aim of this course is to provide the student knowledge and skills required for performing and evaluating molecular immunological methods.	
19	Contribution of the Course to Professional Development:		
20	Learning Outcomes:		
		1	To gain knowledge and skills needed for performing molecular immunological laboratory tests, especially used in research
		2	To gain knowledge and skills needed for the evaluation of molecular immunological laboratory tests, especially used in research
		3	
		4	
		5	
		6	
		7	
		8	
		9	
		10	
21	Course Content:		

Course Content:

Week	Theoretical	Practice
1	DNA and RNA isolation methods	DNA and RNA isolation methods
2	Bacterial transformation	Bacterial transformation

3	Preparation of plazmid DNA from transformed bacteria (Miniprep)	Preparation of plazmid DNA from transformed bacteria (Miniprep)
4	Restriction deigestion and agarose gel electrophoresis	Restriction deigestion and agarose gel electrophoresis
5	cDNA preparation	cDNA preparation
6	Conventional PCR	Conventional PCR
7	RFLP	RFLP
8	RT-PCR	RT-PCR
9	Cytokine gene polymorphism (SSP-PCR)	Cytokine gene polymorphism (SSP-PCR)
10	Sequencing methods	Sequencing methods
11	Gene transfer into mammalian cells by lipofection	Gene transfer into mammalian cells by lipofection
12	Staining of the mammalian cells transfected with ß-galaktosidase plasmid (X-gal)	Staining of the mammalian cells transfected with ß-galaktosidase plasmid (X-gal)
13	Pulse-field agarose gel elektrophoresis	Pulse-field agarose gel elektrophoresis
14	Viral vector design	Viral vector design

22	Textbooks, References and/or Other Materials:	1. Thompson L., "Measuring Immunity: Basic and clinical practice", Elsevier Academi,c Press (2005). 2. Buyru N., Dalay N., Özgüç M., Öztürk M., Sakızlı, M. (Çeviri editörleri) "Hücrenin Moleküler Biyolojisi", TÜBA Yayınları, 1. Basım (2008) 3. Green M., Sambrook J., "Molecular Cloning: A Laboratory Manual", Cold Springer Harbor Laboratory

Activites		Number	Duration (hour)	Total Work Load (hour)
Theoretical	R	14	1.00	14.00
Practicals/Labs		14	4.00	56.00
Self study and preperation		14	4.00	56.00
Homeworks		5	10.00	50.00
Projects		0	0.00	0.00
Field Studies		0	0.00	0.00
Midterm exams		0	0.00	0.00
Others		0	0.00	0.00
Final Exams		1	4.00	4.00
Total Work Load				180.00
Total work load/ 30 hr				6.00
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	0	0	0	0	5	0	0	0	0	0	0	0	0	0	0	0
ÖK2	0	0	0	0	5	0	0	0	0	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**