LABORATORY EQUIPMANTS

1	Course Title:	LABORATORY EQUIPMANTS	
2	Course Code:	TLTZ101	
3	Type of Course:	Compulsory	
4	Level of Course:	Short Cycle	
5	Year of Study:	1	
6	Semester:	1	
7	ECTS Credits Allocated:	6.00	
8	Theoretical (hour/week):	2.00	
9	Practice (hour/week):	4.00	
10	Laboratory (hour/week):	0	
11	Prerequisites:	No	
12	Language:	Turkish	
13	Mode of Delivery:	Face to face	
14	Course Coordinator:	Prof. Dr. MELEHAT DİRİCAN	
15	Course Lecturers:	Prof.Dr.Emre SARANDÖL-Prof.Dr.Arzu YILAZTEPE ORAL-Prof.Dr.Melehat DİRİCAN-Doç.Dr.Nesrin UĞRAŞ-Öğr.Gör.Dr. Perihan ERKAN ALKAN	
16	Contact information of the Course Coordinator:	mdirican@uludag.edu.tr 2953912 Uludağ Üniversitesi Tıp Fakültesi, Temel Tıp Bilimleri Binası, Tıbbi Biyokimya Anabilim Dalı, 16059	
17	Website:		
18	Objective of the Course:	Teach the information and skills to use, maintain and clean the laboratory gadgets	
19	Contribution of the Course to Professional Development:	Usage of laboratory equipment is learned	
20	Learning Outcomes:		
		1	Prepare, use and clean the tools for solutions
		2	Make incubation
		3	Make sterilization
		4	Gain laboratory water
		5	Precipitate liquids
		6	Screen the objects impossible to see with eye with a microscope
		7	Assign matter amount by using light sources
		8	Assign matter amount by using automatic analyser
		9	Assign the amounts of special molecules
		10	Preserve texture, blood, serum etc.
21	Course Content:		

	Course Content:	
Week	Theoretical	Practice
1	Glass and plastic materials, to make material transfer with the aid of a micropipette and the glass pipette. To weigh article.	Introduction of glass and materials are used in the biochemistry laboratory, material transfer, weighing scales with the application materials
2	Methods of mixing the solution, cleaning of the pH meter, glass and plastic materials,	Concentration calculation, the sample solution preparation, pH measurement and making titration
3	Incubation methods	Introduction of materials used at the microbiology laboratory and incubation methods application. materials
4	Sterilization methods	Sterilization methods application
5	To obtain laboratory water	Using distilled water and deiyonize water apparatus and equipment
6	Precipitating fluids by means of centrifuges	Centrifugation of various liquids
7	Tto examine invisible objects-microscopic methods	Examination of the various preparations at microscope
8	Spectrophotometric and nephelometric methods	Spectrophotometric determination of the amount of matter and the standard curve graph plotting
9	Turbidimetric and fluorometric methods	Determination of amount of substance at nefelometer
10	Flame photometry and atomic absorption spectrometry methods	Determination of amount of substance at turbidimeter
11	Automatic Autoanalyzers (biochemistry, and hematology)	Using biochemistry and hematology autoanalyser and sample application
12	Chromatographic methods	Determination of the amount of substances with HPLC
13	Electrophoretic methods	Application of serum protein electrophoresis

Activites	Number	Duration (hour)	Total Work Load (hour)
Theoretical	14	2.00	28.00
Practicals/Labs	14	4.00	56.00
Self study and preperation	14	5.00	70.00
Homeworks	0	0.00	0.00
Projects	0	0.00	0.00
Field Studies	0	0.00	0.00
Midterm Exams	1	12.00	12.00
Others	0	0.00	0.00
Final Exams	1	14.00	14.00
Total Work Load			192.00
Total work load/ 30 hr			6.00
ECTS Credit of the Course			6.00

MEDIUM LEARNING ACTIVITIES	**NUMBER**	**WEIGHT**
Midterm Exam	1	40.00
Quiz	0	0.00
Home work project	0	0.00
Final Exam	1	60.00
Total	2	100.00

Contribution of Term (Year) Learning Activities to Success Grade	40.00
Contribution of Final Exam to Success Grade	60.00
Total	100.00
Measurement and Evaluation Techniques Used in the Course	There is a midterm and a final exam in the form of a multiple choice test.

22	Textbooks, References and/or Other Materials:

1. Klinik Biyokimya Laboratuvarı El Kitabı. Prof. Dr. Idris Mehmetoğlu.
W.B. Saunders Company. 1995.
3. Ravel R. Clinical Laboratory Medicine; Clinical
1995.

24	**ECTS / WORK LOAD TABLE**

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	5	1	1	5	1	1	1	1	1	1	1	1	0	0	0	0
ÖK2	1	1	5	1	1	5	1	1	1	1	1	1	0	0	0	0
ÖK3	5	1	5	1	1	5	1	1	1	1	1	1	0	0	0	0
ÖK4	5	1	1	1	1	5	1	1	1	1	1	1	0	0	0	0
ÖK5	5	1	5	1	1	5	1	1	1	1	1	1	0	0	0	0
ÖK6	5	1	1	5	1	5	1	1	1	1	1	1	0	0	0	0
ÖK7	5	1	1	5	1	5	1	1	1	1	1	1	0	0	0	0
ÖK8	5	1	1	5	1	5	1	1	1	1	1	1	0	0	0	0
ÖK9	5	1	1	5	1	5	1	1	1	1	1	1	0	0	0	0
ÖK10	5	5	1	1	1	1	1	1	1	1	1	1	0	0	0	0
LO: Learning Objectives PQ: Program Qualifications																
Contribution Level:	**1 very low**		**2 low**			**3 Medium**			**4 High**			**5 Very High**				