

DEPARTMENT OF MOLECULAR BIOTECHNOLOGY
COURSE SYLLABUS

Course Details					
Code				Academic Year	Semester
MBT364				3	6
Title	T	A	L	ECTS	
Bioanalytics	3	0	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	Having knowledge about instrumental analytics for biological samples.				
Content	Spectroscopical Methods (UV-Vis, IR, Raman, Fluorescence), Validation, Chromatographical Methods, Mass Spectrometry, Biochemical Methods, Biosensors.				
Prerequisites	-				
Coordinator	Assoc. Prof. Dr. Aysu Yarman				
Lecturer(s)	Assoc. Prof. Dr. Aysu Yarman				
Assistant(s)	Res. Asst. Melis Işık Toksoy				
Work Placement	-				
Recommended or Required Reading					
Books / Lecture Notes	Kurreck J., Engels J., Lottspeich F. (Eds) Bioanalytik, Springer Spektrum, 2021 Lecture notes				
Other Sources	Renneberg R., Bioanalytik für Einsteiger, Spektrum Verlag, 2009				
Additional Course Material					
Documents					
Assignments					
Exams					
Course Composition					
Mathematics and Basic Sciences	30			%	
Engineering	10			%	
Engineering Design				%	
Social Sciences				%	
Educational Sciences				%	
Natural Sciences	50			%	

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Health Sciences	10		%
Expert Knowledge	100		%
Assessment			
Activity	Count		Percentage (%)
Midterm Exam	1		30
Quiz	-		-
Assignments	3		20
Attendance	-		-
Recitations	-		-
Projects	-		-
Final Exam	1		50
		Total	100
ECTS Points and Work Load			
Activity	Count	Duration	Work Load (Hours)
Lectures	13	3	39
Self-Study	13	4	52
Assignments	3	15	45
Presentation / Seminar Preparation	-	-	-
Midterm Exam	1	10	10
Recitations	-	-	-
Laboratory	3	5	15
Projects	-	-	-
Final Exam	1	13	13
		Total Work Load	174
		ECTS Points (Total Work Load / Hour)	6
Learning Outcomes			
1	Having knowledge about instrumental analytics.		
2	Working with biological samples.		
Weekly Content			
1	Introduction		
2	UV-Vis Spectroscopy		
3	Protein Determination		
4	Fluorescence Spectroscopy		
5	Validation		
6	Vibrational Spectroscopy Part 1		

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7	Vibrational Spectroscopy Part 2 and Circular Dichroism Spectroscopy
8	Chromatography
9	Introduction to Mass Spectrometry
10	Enzymatic Determination Methods
11	Immunological Methods and Nucleic Acid Analysis
12	Electroanalytical Methods
13	Biosensors

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

	P1	P2	P3	P4	P5	P6	P7
1	5	5	5	5	-	4	4
2	5	5	5	5	-	4	4

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:	Assoc. Prof. Dr. Aysu Yarman
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