ELECTROCHEMICALSENSORS											
1	Course Title:	ELECTR	OCHEMICALSENSORS								
2	Course Code:	KIM6020)								
3	Type of Course:	Optional									
4	Level of Course:	Third Cy	cle								
5	Year of Study:	1									
6	Semester:	2									
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 f	ace								
14	Course Coordinator:	Prof. Dr.	MEHMET HALUK TÜRKDEMİR								
15	Course Lecturers:	Yok									
16	Contact information of the Course Coordinator:	hturkden 0224 294	nir@uludag.edu.tr 41741								
17	Website:										
18	Objective of the Course:	To bring general information about electrochemical sensors, practical and preparation knowledge and to give current sampling									
19	Contribution of the Course to Professional Development:	General concepts and types of sensors, electrochemical-based sensor types, preparation and measurement principles, and current samplings									
20	Learning Outcomes:										
		1	Definition of electrochemical sensors, knows their characteristics and classification								
		2	Working principles of electrochemical sensors and different from other types of sensors are known								
		3	Approaches to preparing electrochemical sensors, chemical and biological processes utilized can compare								
		4	Aware of electrochemical sensors uses area; LC, CE and others								
		5									
		6									
		7									
		8									
		9									
	-	10									
21	Course Content:										
		Co	ourse Content:								
Week	Theoretical		Practice								
1	Electrochemical sensor definition, hi development processes	storical									
2	Differences from the other sensor ar transducer systems, comparisons in precision, service life and maintenar requirements	nd terms of nce									

3	Class	sifica	ation o	of elec	troche	emical	senso	ors												
4	Sens chem senso	or p nical or su	repara and b urface	ation a biologi modif	approa cal co ficatio	aches u Impone Ins	utilize ents, t	d he												
5	Poter const	tentiometric sensors, developments and nstructions																		
6	Curre	rrent examples of potentiometric sensors																		
7	Cond	lucto	ometri	ic sens	sors, o	current	samp	oles												
8	Could and c	ome curre	tric se ent sa	ensors mpling	, mea J	sureme	ent pr	inciple	S											
9	Field- meas	-effe sure	ect ser ment	nsors, princip	prepa oles, a	arations areas o	s, f use													
10	Gene conce nume	neral reminders, description of unifying nepts and measurement examples, nerical calculations																		
11	Ampe meas	eron sure	netric ment	senso princip	rs, co oles	nstruct	ions,													
12	Ampe	eron	netric	senso	rs for	use in	CE a	nd LC												
13	Volta and n	mm nea:	etry b surem	ased s nent pr	senso incipl	rs, prej es	oarati	ons												
14	Volta curre	oltammetric sensors and usage areas, urrent samplings																		
22	Textb Mate	tbooks, References and/or Other								1. J. Wang, Analytical Electrochemistry, Wiley, 2006 2. Sensor Technology Handbook, Ed. Jon S. Wilson, Wiley										
Activit		inaio	-						 	Numb		nology		tion (
Activites									Num							Load (hour)				
Theore	tical								5	Tapy.							Ed			
Practicals/Labs									0	Janary		0.00	0.00			0.00				
Self_study and preperation										14			2.00			28.00				
Homeworks										2			15.00			30.00				
Project	Projects R									0			0.00	0.00						
Field S	tudies									0			0.00			0.00				
Midi tern	Aldrerm exams 0									0.00			35.00	35.00			35.00			
Others	 Dthers									0			0.00	0.00						
Final E	al Exams 1									60100			40.00	40.00						
Total W	Total Work Load															175.00				
Constributional Som (Year) Learning Activities to									40	40.00					5.83					
ECTS Credit of the Course															6.00					
Contrib	Contribution of Final Exam to Success Grade								60	60.00										
Total	tal									100.00										
Measurement and Evaluation Techniques Used in the Course								e Cl ho	Classical written exams and time-limited personal homeworks will be used and absolute evaluation will be made											
24 ECTS / WORK LOAD TABLE																				
25	25 CONTRIBUTION OF LEARNING OUTCOMES TO PROGRAMME																			
								<u> </u>	.0A											
	P	Q1	PQ2	PQ3	PQ4	PQ5	PQ6	PQ7	PQ8	PQ9	PQ1 0	PQ11	PQ12	PQ1 3	PQ14	PQ15	PQ16			
ÖK1	4	4 0 0 0 3 0 0 0							0	0	0	0	0	0	0	0	0			

ÖK2	0	4	0	2	0	0	0	0	0	0	0	0	0	0	0	0
ÖK3	4	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0
ÖK4	0	0	4	0	4	0	0	0	0	3	0	0	0	0	0	0
LO: Learning Objectives PQ: Program Qualifications																
Contrib ution Level:	trib 1 very low on /el:			2 low		3 Medium		4 High		5 Very High						