ELECTROCHEMICAL IMPEDANCE SPECTROSCOPY II									
1	Course Title:	ELECTR	OCHEMICAL IMPEDANCE SPECTROSCOPY II						
2	Course Code:	FZK6114							
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.	AHMET PEKSÖZ						
15	Course Lecturers:								
16	Contact information of the Course Coordinator:	peksoz@ PEKSÖZ Kampüsi	2uludag.edu.tr, (0224) 29 41 713, Prof. Dr. Ahmet Z, UÜ Fen Edebiyat Fakültesi, Fizik Bölümü 16059 Görükle ü Bursa						
17	Website:								
18	Objective of the Course:	To introduce basic impedance experiments and physical models for equivalent electronic circuit in electrochemical impedance spectroscopy (EIS).							
19	Contribution of the Course to Professional Development:	Learns basic principles of electrochemical impedance spectroscopy							
20	Learning Outcomes:								
		1	Learns investigation of the physical properties of material electrolyte interfaces						
		2	Learns various equivalent electronic circuit models fitted to EIS data						
		3	Learns scientific and industrial applications of electrochemical impedance spectroscopy						
		4							
		5							
		6							
		7							
		8							
		9							
		10							
21	Course Content:								
		Co	urse Content:						
Week	Theoretical		Practice						
1	Electrochemical Instrumentation								
2	Electrochemical and Boundary Cond Reversible and Irreversible Interface								
3	Potentiostat for EIS Meaurement, AC Theory and Representation of Comp Impedance Values								

4	Experi Desigr		ntal T	echni	ques	and Ex	perim	ental									
5	Graph		Meth	nods													
6		andles Circuit Applications, Real and aginary Component of Impedance															
7		EIS Behavior Depending on Frequency, Ayquist and Body Representations															
8	MIDTE	IDTERM EXAM															
9		Effect of Constant Phase Element Coefficient, Data Presentation					ıt,										
10	Linear	ity c	of Ele	ctroch	emist	t ry Sys t	tems										
11	Stead	teady State Systems															
12	Physical Electrochemistry and Equivalent Circuit Elements, Electrolyte Resistance, Double Layer Capacitance, Polarization Resistance, Charge Transfer Resistance, Coating Capacitance																
13	Fitting Data	Fitting Equivalent Electronic Circuit to EIS Data															
14	Equivalent Electronic Circuit Models for Different Applications																
22	Materials: 2. Molecular Physics and Elements of Quantum Chemistry, Hans Christoph Wolf, Hermann Haken, Springer. 2010.																
Activites							Number			Duration (hour)		Load (hour)					
Theoretical							14 MEICHT			3.00			42.00				
Practicals/Labs							0 0.00			0.00							
Siditstord Example preparation 1						25	25190			4.00		56.00					
Homeworks						(0		0.00		0.00						
Roojeectsork-project 1						25	25000			0.00			0.00				
Field St	Field Studies						(0			0.00			0.00			
17/ictat ern	aerm exams 3						10	100.00 30.00				30.00					
Others							(0		0.00			0.00				
FinalE	areas Grade						ŕ	1			52.00			52.00			
Total W	otal Work Load														180.00		
Total w	otal work load/ 30 hr						10	100.00						6.00			
	ECTS Credit of the Course											6.00					
Course 24	-	2/1		אראכ		TAB											
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25	25 CONTRIBUTION OF LEARNING OUTCOMES TO PROGRAMME QUALIFICATIONS																
	PC	21	PQ2	PQ3	PQ4	PQ5	PQ6	PQ7	PQ8	PQ9	PQ1 0	PQ11	PQ12	PQ1 3	PQ14	PQ15	PQ16
ÖK1	4	4	4	4	5	5	3	3	5	4	5	0	0	0	0	0	0
ÖK2	4	4	4	3	5	4	4	5	5	5	4	0	0	0	0	0	0
ÖK3	4	;	3	4	3	5	4	5	4	5	5	0	0	0	0	0	0
			L	0: L	earr	ning C	bjec	tive	s F	Q: P	rogra	ım Qu	alifica	tions	5	•	

Contrib ution	1 very low	2 low	3 Medium	4 High	5 Very High
Level:					