Semester 777777777777777777777777777777777777	Teaching		OPY	<b>IODERN</b>		ADVA	NCED TH	ECHNOL	OGIES		
I-2     Z       Language     Z       Compulsory/     H		Teaching and Learning Methods								Credit	
Language 7 Compulsory/ H	Theory	App.	Lab.	Project	Hor	nework	Other	Total	Credit	ECTS Credit	
Compulsory/ I	42				100	1	46	188	3	7.5	
	Turkish										
Elective	Elective										
Prerequisites 1	None										
Content	Basic Principles of Spectroscopy. Molecular Symmetry and Group Theory. Nuclear Magnetic Resonance Spectroscopy. Mössbauer Spectroscopy. Electron Spin Resonance Spectroscopy. Infrared Spectroscopy. X-Ray Spectroscopy. EDXRF Spectroscopy. WDXRF Spectroscopy. Mass Spectrometry. Analyzing of spectrum obtained from relevant spectrometers.										
Course 7 Objectives	<ul> <li>The objectives of course shall be to enable students to:</li> <li>to learn experimental techniques,</li> <li>to understand theory and</li> <li>to learn of applications of spectrometers by means of basic spectroscopic knowledges.</li> </ul>										
Learning outcomes and competences	<ul> <li>Ability to use technical /modern materials to be required in her/his Works,</li> <li>Ability to present oral and written forms in her/his field,</li> <li>Ability to work on interdisiplinary studies,</li> <li>Ability to rapidly distinguish the true an required knowledge,</li> <li>Ability to do analyze of results.</li> </ul>										
Textbook and /or	<ul> <li>Raymond Chang, Basic Principles of Spectroscopy. McGraw-Hill Kogakusha Ltd, International Student Edition, Catalog Card Number 74-132340 (1971)</li> <li>J. Michael Hollas, Modern Spectroscopy. John Wiley &amp; Sons; 3 rd ed., (2002)</li> <li>Donald L. Paiva, Gary M. Lampman, George S. Kryz, Introduction of Spectroscopy. Sounders College; Catalog Card Number 77-11348 (1979)</li> </ul>										
References	•		d L. Pa	aiva, Gary M	l. Lamp	troscopy man, Ge	y. John W eorge S. I	/iley & So Kryz, Intro	ons; 3 rd ed.	., (2002)	
References Assessment Criteria	•		d L. Pa	aiva, Gary M	l. Lamp	troscopy man, Ge	y. John W eorge S. I	/iley & So Kryz, Intro	ons; 3 rd ed.	., (2002)	
Assessment Criteria	•	Sound	d L. Pa ers Co	aiva, Gary M	l. Lamp	troscopy man, Ge	y. John W eorge S. I	/iley & So Kryz, Intro	ons; 3 rd ed. oduction of <i>If any,</i> <i>mark as</i>	., (2002) Spectroscopy. Percentage	
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Assessment Criteria	• Midterm Quizzes	Sound n Exan orks	d L. Pa ers Co	aiva, Gary M	l. Lamp	troscopy man, Ge	y. John W eorge S. I	/iley & So Kryz, Intro	If any, mark as (X) X	., (2002) Spectroscopy. Percentage (%)	
Assessment Criteria	• Midterm Quizzes Homewo	Sound n Exan orks	d L. Pa ers Co	aiva, Gary M	l. Lamp	troscopy man, Ge	y. John W eorge S. I	/iley & So Kryz, Intro	If any, mark as (X) X	., (2002) Spectroscopy. Percentage (%)	
Assessment Criteria	• Midterm Quizzes Homewo Projects	Sound n Exan orks aper	d L. Pa ers Co ns	aiva, Gary M	l. Lamp	troscopy man, Ge	y. John W eorge S. I	/iley & So Kryz, Intro	If any, mark as (X) X	., (2002) Spectroscopy. Percentage (%) 30	
Assessment Criteria	• Midterm Quizzes Homewo Projects Term pa	Sound n Exan orks aper	d L. Pa ers Co ns	aiva, Gary M	l. Lamp	troscopy man, Ge	y. John W eorge S. I	/iley & So Kryz, Intro	If any, mark as (X) X	., (2002) Spectroscopy. Percentage (%) 30	
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Assessment Criteria	• Midterm Quizzes Homewo Projects Term pa Laborat Other Final Ex Doç. Dr.	Sound n Exan orks aper tory W	d L. Pa ers Co ns	aiva, Gary M llege; Catalo	l. Lamp	troscopy man, Ge	y. John W eorge S. I	/iley & So Kryz, Intro	If any, mark as (X) X X X	., (2002) Spectroscopy. Percentage (%) 30 20 10	
Assessment Criteria         I           I         I           I         I           I         I           I         I           Veek         S           I         I           2         S           3         I           4         C	• Midterm Quizzes Homewo Projects Term pa Laborat Other Final Ex Doç. Dr. Subject Basic pri Spectroso Molecula Group Th Characte	Sound n Exam orks aper tory W cory W cory W cory Cory Cory cory Cory cory Cory cory Cory cory Cory cory Cory cory Cory cory Cory cory cory Cory cory cory Cory co	A L. Pa ers Co ns 70rk RHAN s of sp ransiti metry Point , Appl	aiva, Gary M Illege; Catalo ectroscopy; ons, Selectio groups, Repr ications of gr	Linewi por rules resentat	troscopy man, Ge Numbe	y. John W eorge S. I pr 77-1134 solution, - to noise p roups,	Absorbtio ratio	ns; 3 rd ed. oduction of If any, mark as (X) X X X X X	., (2002) Spectroscopy. Percentage (%) 30 20 10 40	

8	Electron Spin Resonance Spectroscopy (Theory, Experimental Techniques, Applications)
9	Infrared Spectroscopy (Theory, Experimental Techniques, Applications)
10	Mössbauer Spectroscopy (Theory, Experimental Techniques, Applications)
11	X-Ray Spectroscopy (Theory, Experimental Techniques, Applications)
12	EDXRF Spectroscopy (Theory, Experimental Techniques, Applications)
13	WDXRF Spectroscopy (Theory, Experimental Techniques, Applications)
14	Mass Spectrometry