



Code and Name: FİZ5500 MOLECULAR SPECTROSCOPY

Unit: Graduate School of Natural and Applied Sciences

Detail: **Period:** 2023-2024 **Status:** Optional **Class:** 1 **Credits:** 2-2-0-3 **ECTS:** 6 **Language:** Turkish

INSTRUCTOR

Title, Name and Surname: -
Phone: -
Email: -
Social Account: -
Student Day and Time: -

COURSE ASSISTANT

Title, Name and Surname:
Phone:
Email:
Social Account:
Student Day and Time:

Lessons Weekly Program:	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
			-			

Rendering: Face-to-face lessons per week 3 It will be done on an hourly basis.

Place: YY: - UE: -

Purpose: Teaching the basic concepts of Molecular Spectroscopy

Material: P.W. Atkins, Physical Chemistry, 1998; M. Karplus and R. N. Porter, Atoms and Molecules, 1970; H. Haken and H. C. Wolf, Molecular Physics and Elements of Quantum Chemistry, 2004.

Student Responsibility: Research before and after class

Weekly Lesson Plan	Week	Topic	Method
	1	Definition of Spectroscopy, Electromagnetic Radiation and Properties	YY
	2	Wave and Particle Character of Radiation	YY
	3	Quantum Structure of Matter and Transitions	YY
	4	Molecules Enerji Dağılımı ve Enerji Seviyeleri Arasındaki Geçişler	YY
	5	Electromanyetik Spectrum	YY
	6	Microwave Spectroscopy	YY
	7	UV and Visible Absorption Spectroscopy	YY
	8	MIDTERM EXAM	YY
	9	Infrared Theory, Vibration Types and Selectivity Rules	YY
	10	Infrared Spectroscopy , Applications and Structure Determination	YY
	11	Raman Spectroscopy and Applications	YY
	12	Angular Momentum and Magnetic Momentum	YY
	13	Rotation-Vibration Spectra of Diatomic and Polyatomic Molecules ,	YY
	14	Electronic Spectra of Diatomic and Polyatomic Molecules	YY

Assessment and Evaluation	Method		Number	Weight
	Break Exam	Exam	Face	1 % 50
		Quiz	-	-
		Homework	-	-
		Project	-	-
	General Exam	Face	1	% 50

Course Outcomes:	1	To be able to comprehend the interactions between molecules and electromagnetic radiation.
	2	To be able to learn various spectroscopy techniques .
	3	To be able to evaluate the analysis related to spectroscopy techniques.
	4	To be able to comprehend the applicability of spectroscopy techniques in the field of physics
	5	

Course-Specific Explanations:

UE: Distance Education; YY: Face-to-Face Education



T.C.
FIRAT UNIVERSITY
Course Syllabus Form

Document No	EGTM - 0001
Publication Date	13.09.2021
Revision Date	-
Revision No	0