



Code and Name: FİZ5720 BASIC SCATTERING THEORY

Unit: Graduate School of Natural and Applied Sciences

Detail: **Period:** 2023-2024 **Status:** Optional **Class:** 1 **Credits:** 3-0-0-3 **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: To be able to analyze scattering reactions between atoms and molecules

Material: V. Magnasco, Methods of Molecular Quantum Mechanics, 2009; R. D. Levine, Molecular Reaction Dynamics, 2005; D. Bohm, Quantum Theory, Prentice -Hall

Student Responsibility: Preparation before and after class

Weekly Lesson Plan	Week	Topic	Method
	1	Classical scattering theory,	YY
	2	Classical and Quantum Mechanical Impact Sections	YY
	3	Hamilton's Equations and the Classical Trajectory Method	YY
	4	Characteristics of orbits,	YY
	5	Classical and Quantum Mechanical Structure of Total and Differential Impact Cross-Sections	YY
	6	Reagent scattering,	YY
	7	Elastic Scattering	YY
	8	Inelastic Scattering	YY
	9	MIDTERM EXAM	YY
	10	In Collision Theory Quantum Mechanic Cell Models	YY
	11	Thermodynamic and Statistical Properties of Scattering	YY
	12	Unitarity of the S Matrix	YY
	13	T Matrix and U Matrix	YY
	14	Partial Waves	YY

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

Course Outcomes:	1	Develop knowledge of topics related to basic scattering theory at an expert level
	2	Critically evaluate the knowledge of basic scattering theory,
	3	Will be able to comprehend the relationship of basic scattering theory with other subjects of physics and its impact on them.
	4	
	5	

Course-Specific Explanations:

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



T.C.
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Course Syllabus Form

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