Code and Name:	**FİZ5490 MOLECULAR ORBITAL 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 have knowledge about electronic structures for molecular systems**

Material: **Prof. Dr. Sevim Akyüz Ders notları, P.W. Atkins, Physical Chemistry,1998; M. Karplus and R. N. Porter, Atoms and Molecules ,1970**

Student Responsibility : **Preparation before and after class**

Weekly Lesson Plan

Week	Topic	Method
1	Historical Development of Molecular Orbital Theory	YY
2	Innovative Molecular Orbital Models	YY
3	Introduction of Basic Concepts such as Atomic, Molecular and Hybridization	YY
4	Sigma(σ) and Pi(π) Orbitals, Linear Combination of Molecular Orbitals	YY
5	Molecular Orbital Diagrams	YY
6	Molecular Orbital Theory and Reactivity	YY
7	Effect of Molecular Stability on Electron Distribution	YY
8	Molecular Orbital Theory and Chemical Bonding	YY
9	MIDTERM EXAM	YY
10	Molecular Geometry Prediction with Molecular Orbital Theory	YY
11	Electron Filling Rules	YY
12	Molecular Orbital Analysis of Density Functions	YY
13	Explanation of Chemical Bonds with Density Functions	YY
14	Electron Distribution in Metal Complexes	YY

Assessment and Evaluation

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

Course Outcomes:

1	Have knowledge about molecular electrons and molecular bonds.
2	The electronic layouts of diatomic and polyatomic molecules have information about their energy levels.
3	Learns the electronic transitions of molecules
4	Learns molecular orbital identification.
5	Comprehend the interactions between molecular orbitals.

Course-Specific Explanations:

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