



Code and Name: FİZ5650 REACTOR TECHNOLOGY

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 understand how neutrons react in nuclear fuel and their role in nuclear energy production. To learn the chain effect of fission reactions and their effects on reactor design and operation. To study the behavior and control mechanisms of the reactor over time. Understanding how nuclear fuel burns and produces energy and the impact of the combustion process on reactor efficiency.

Material: Fundamentals of Nuclear Reactor Physics, E. E. Lewis, 2008.

Student Responsibility: Attending classes, submitting assignments on time, and participating in exams.

Weekly Lesson Plan	Week	Topic	Method
	1	Basic Reactor Technique	YY
	2	Neutron Nuclear Reactions	YY
	3	Neutron Chain Fission Reactors	YY
	4	Neutron Energy Dissipation	YY
	5	Nuclear Reactor Dynamics	YY
	6	Fuel Combustion	YY
	7	Nuclear Power Reactors	YY
	8	Reactor Safety	YY
	9	Advanced Reactor Physics	YY
	10	Neutron Physics	YY
	11	Absorpsy Reasoning	YY
	12	Neutron Thermalization	YY
	13	Perturbation Methods	YY
	14	Variational Methods	YY

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

Course Outcomes:	1	Learn about the various types of nuclear reactors and their use in energy production.
	2	Obtain knowledge about the precautions and safety systems required for the safe operation of nuclear reactors
	3	Learn more advanced concepts and theories of reactor physics.
	4	Examines how neutrons move within a reactor and the impact of this movement on reactor design..
	5	Understands the absorption of neutrons by materials and its impact on reactor design.

Course-Specific Explanations:

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



T.C.
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Course Syllabus Form

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