	ADVANCE	ED NE	UTRON PHYSICS II							
1	Course Title:	ADVANCED NEUTRON PHYSICS II								
2	Course Code:	FZK5507	7							
3	Type of Course:	Optional								
4	Level of Course:	Second	Cycle							
5	Year of Study:	1								
6	Semester:	1								
7	ECTS Credits Allocated:	6.00								
8	Theoretical (hour/week):	3.00								
9	Practice (hour/week):	0.00								
10	Laboratory (hour/week):	0								
11	Prerequisites:	None								
12	Language:	Turkish								
13	Mode of Delivery:	Face to f	ace							
14	Course Coordinator:	Prof. Dr.	AHMET CENGİZ							
15	Course Lecturers:	Prof. Dr.	Orhan GÜRLER							
16	Contact information of the Course Coordinator:	Prof. Dr. Ahmet Cengiz B. U. Ü. Fen-Edebiyat Fakültesi Fizik Bölümü 16059 Görükle Bursa email: acengiz@uludag.edu.tr Tel: 0224 2941695								
17	Website:									
18	Objective of the Course:	Aim of the course is to provide students with advanced knowledge related to the neutron physics. Neutron interactions with matter, neutron transport equation, the teaching physical information about nuclear reactors.								
19	Contribution of the Course to Professional Development:	Learns information of Neutron Physics the necessary for Nuclear Physics.								
20	Learning Outcomes:									
		1	The Neutron Transport Equation: Basic concepts and definitions of variables are learned.							
		2	The Diffusion Approximation of Neutron Transport Equation. Neutron Diffusion Theory are learned.							
		3	Derivation of One-Speed Diffusion Equation are learned.							
		4	Criticality Conditions in Bare Homogeneous Reactor, Reflected Reactor for special geometry are learned.							
		5	Numerical Solution of Diffusion Equation are learned.							
		6								
		7								
		8								
		9								
		10								
21	Course Content:									
VA/	Theoretical	Co	Durse Content:							
VVEEK			Practice							
1	I ne Neutron Transport Equation									

2	Deri tran:	erivation of time-dependent neutron ansport equation																		
3	The Trar	The Diffusion Approximation of Neutron Transport Equation.																		
4	Neu	eutron Diffusion Theory																		
5	Deri	erivation of Fick's law																		
6	Deri	erivation of One-Speed Diffusion Equation																		
7	Solutions of the One-Speed Diffusion Equation for Non-multiplying Media																			
8	Solutions of the One-Speed Diffusion Equation for Multiplying (Reactor Core) Media																			
9	Criti Rea geoi	Criticality Conditions in Bare Homogeneous Reactor, Reflected Reactor for special geometry																		
10	Intro	oducti	ion to	multi-	group	diffusi	on the	ory												
11	mult	iplyin	ng me	dia an	d criti	cality c	onditio	ons												
12	Con	tinue																		
13	Slov	ving-l	Down	and D	oiffusio	on of N	leutror	าร												
14	Gen	General Review and Problem Solutions																		
22	Text Mate	book erials	s, Rei :	ferenc	es an	d/or O	ther		K.H	K.H.Beckurts; K.Wirtz, Neutron physics, Springer-Verlag, 1964.										
Activites							1	Numb	er		Dura	Duration (hour)			Total Work Load (hour)					
Theore	tical									Den George I. and Glassione Samuel, Nuclear P						42.00	.01			
Practicals/Labs									0				прапу	0.00						
Self study and preperation								201	2017			3.00			42.00					
Homeworks								1	14			3.00			42.00					
Projects									1	14			1.00			14.00				
Field S	tudie	S								0			0.00	0.00						
Midtern	n exa	amas					0		0.6	0.00			0.00	0.00			0.00			
Others	Dthers								1	14			3.00	3.00						
FionaleE	Fight Examsoroject								0.Ć	0.00						2.00				
Total W	Vork I	Load					i									184.00				
Teta l w	ork l	oad/ :	30 hr				1		10	0.00					6.13					
ECTS Credit of the Course														6.00						
Succes	ss Gr	ade																		
Contribution of Final Exam to Success Grade								10	100.00											
Total							10	100.00												
Measurement and Evaluation Techniques Used in the The system of relative evaluation is applied.																				
24 ECTS / WORK LOAD TABLE																				
25 CONTRIBUTION OF LEARNING OUTCOMES TO PROGRAMME QUALIFICATIONS																				
		PQ1	PQ2	PQ3	PQ4	PQ5	PQ6	PQ7	PQ8	PQ9	PQ1 0	PQ11	PQ12	PQ1 3	PQ14	PQ15	PQ16			
ÖK1		5	4	4	4	4	3	4	4	4	4	5	0	0	0	0	0			

ÖK2	5	4	4	4	5	4	4	4	5	5	4	0	0	0	0	0
ÖK3	5	5	5	4	4	4	3	4	4	4	5	0	0	0	0	0
ÖK4	4	5	4	5	4	3	4	3	4	4	5	0	0	0	0	0
ÖK5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
LO: Learning Objectives PQ: Program Qualifications																
Contrib 1 very low ution Level:			2 low			3 Medium			4 High			5 Very High				