RELATIVISTIC QUANTUM MECHANICS I									
1	Course Title:	RELATI	/ISTIC QUANTUM MECHANICS I						
2	Course Code:	FZK5209							
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:								
12	Language:	Turkish							
13	Mode of Delivery:	Face to	face						
14	Course Coordinator:	Dr. Ögr. Üyesi ZERRİN KIRCA							
15	Course Lecturers:	Yrd. Doç. Dr. Zerrin KIRCA, Doç. Dr. Cem Salih ÜN							
16	Contact information of the Course Coordinator:	Yrd. Doç. Dr. Zerrin KIRCA E-mail: zkirca@uludag.edu.tr İş Tel:(0224)2941704 Adres: UÜ Fen Edebiyat Fakültesi, Fizik Bölümü, 16059 Görükle Kampusü, Bursa							
17	Website:								
18	Objective of the Course:	The aim of this course is to provide information about quantization of fields and mathematical structure of relativistic quantum mechanics. Also relativistic quantum mechanics is provide basic concepts of the quantum field theory							
19	Contribution of the Course to Professional Development:								
20	Learning Outcomes:								
		1	To learn the basic conceptual foundations of the relativistic quantum mechanics.						
		2	To learn mathematical structure of the relativistic quantum mechanics.						
		3	To learn quantized field equations according to spin states						
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		5							
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21	Course Content:								
	Course Content:								
	Theoretical	((Practice						
1	Special relativity (review), description vector, metric								
2	Special relativity; Proper time, Physics spacetime	cs in flat							

3	Rela	Relativistic wave equation for spin-0 particles						\$									
4		Schrodinger equation (relativistic corrections) and Klein-Gordon equation)										
5	Kleir	Klein-ordon equation and problems															
6	Kleir	n-Go	rdon e	quatio	on and	d practi	ices										
7		Concepts of spinor and bilinear covariant orms															
8		Concepts of spinor and bilinear covariant orms and practices															
9				ve equ cequat		for spi	n-1/2										
10	parti	Relativistic wave equation for spin-1/2 particles: Dirac equation, definition of particle- anti particle															
11	Lore	ntz c	ovaria	ance fo	orm o	f Dirac	equat	ion									
12	equa	ation	-Lorer	ntz cov	varian												
13						opera											
14	ener	gy ve	e spin	projec	ction o	operato	ors – p	ractis	е								
22								Wa 2- I Fra	 Relativistic Quantum Mechanics, Wave Equations by Walter Greiner. Relativistic Quantum Mechanics and Field theory by Franz Gross. Relativistic Quantum Mechanics; An Introduction to 								
	Activites						٢	lumb	er		Duration (hour) Total Work Load (hour)						
Theore TERM L				VITIES			IN	IUMBE	WE	IGHT							
Practica										2.0							
Sentero 		hold pr	epera	ition			1		25.	00							
Homew		proje	ot				1		25.	00							
							<u></u>	00									
Field St		-					3		1100	0.00							
Others								4									
Final E																	
Total W																	
Teta l w	ork lo	bad/	30 hr						100	0.00							
	TS Credit of the Course														6.00		
24	EC	rs /	WO	RK L	OAD	TAB	LE										
25 CONTRIBUTION OF LEARNING OUTCOMES TO PROGRAMME QUALIFICATIONS																	
			DO2	PQ3		DOF	DOG	DO7		PQ9	DO1	PQ11	DO12	PQ1	PQ14	PQ15	PQ16
	ľ	PQ1	PQZ	PQ3	PQ4	PQ5	PQ6	PQ7	PQ8	PQ9	0	PQTT	PQ12	3	PQ14	PQ15	PQ16
ÖK1	()	0	0	4	4	0	0	0	3	0	4	0	0	0	0	0
ÖK2	(C	4	3	0	0	0	0	0	0	0	4	0	0	0	0	0
ÖK3	C	C	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Contrib ution	1 very low	2 low	3 Medium	4 High	5 Very High
Level:					