

Fizik Bölümü / PHYSICS /						
Course Code	Course Name	Teorical	Practice	Laboratory	Credits	ECTS
FZK-2004	Modern Physics Laboratory	0.00	4.00	0.00	2.00	4.00
Course Detail						
Course Language	: Turkish					
Qualification Degree	: Bachelor					
Course Type	: Compulsory					
Preconditions	: Not					
Objectives of the Course	: Making and interpreting the fundamental experiments of modern physics					
Course Contents	: Units, metric systems, and applications, Measurement error and significant figures,error calculation, percanteg error,Atomic structure,,charged and uncharged particles,energy levels, e/m experiment, Franck Hewrtz experiment, energy levels of hydrogen, Balmer series experiment, formation and the evaluation of Quantum physics, Photoelectric effect, Radioactivity, radioactive particles, Geiger Müler counter experiment					
Recommended or Required Reading	: Modern Physics Laboratory booklet					
Planned Learning Activities and Teaching Methods	: Laboratory					
Recommended Optional Programme Components	: -					
Instructors	: Prof. Dr. Serhat Özder					
Instructor's Assistants	: Ress. Ass. Naci ERKAN					
Presentation Of Course	: Laboratory					

Course Outcomes	
Upon the completion of this course a student :	
1	Setting up, analyzing and executing of DC circuits.
2	Setting up, analyzing and executing of AC circuits.
3	Using of an oscilloscope, multimeter, function generator and others.
4	It is possible to be able to practice of the knowledge learned by technical books.
5	Responsibility of student as a person and as a member of a group could be gained about to solve any problem of physics.
6	Learning documentation of any work by a report study

Preconditions						
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Weekly Contents					
	Teorical	Practice	Laboratory	Preparation Info	Teaching Methods
1.Week			*Units		
2.Week			*Metric systems and its applications		
3.Week			*Measurement errors and significant figures		
4.Week			*: Error calculations, percentage errorsi normalisation, some statistical methods		
5.Week			*Atomic strucrure, charged and neutral particles, energy levels		
6.Week			*e/m experiment		
7.Week			*Franck-Hertz experiment		
8.Week			*Energy levels of atom		
9.Week			*Energy levels of Hydrogen atom		
10.Week			*Balmer series of Hydrogen		
11.Week			*The born of Quantum Physics and its historical development		
12.Week			*Photoelectric effect experiment		
13.Week			*Radioactivity and radioactive particals		
14.Week			*Radioactivity experiment with Geiger-Müller counter		

Assesment Methods %	
1	Report Writing : 40.000
3	Final : 60.000

ECTS Workload	
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Activities	Count	Time(Hour)	Sum of Workload
Kisa Sınav	6	0.00	0.00
Final Exam	1	2.00	2.00
Individual study before lecture	8	2.00	16.00
Report Writing	6	3.00	18.00
Make-up	1	2.00	2.00
Class Hours (14 weeks)	14	4.00	56.00
Preparation for final	1	25.00	25.00
			Total : 119.00
			Sum of Workload / 30 (Hour) : 4
			ECTS : 4.00

Program And OutcomeRelation																								
	P.O. 1	P.O. 2	P.O. 3	P.O. 4	P.O. 5	P.O. 6	P.O. 7	P.O. 8	P.O. 9	P.O. 10	P.O. 11	P.O. 12	P.O. 13	P.O. 14	P.O. 15	P.O. 16	P.O. 17	P.O. 18	P.O. 19	P.O. 20	P.O. 21	P.O. 22	P.O. 23	P.O. 24
L.O. 1	5	3	4	4	3	5	5	5	2	5	2	3	4	3	5	5	4	3	4	2	3	2	4	4
L.O. 2	5	3	4	4	3	5	5	5	2	5	2	3	4	3	5	5	4	3	4	2	3	2	4	4
L.O. 3	5	3	4	4	3	5	5	5	2	5	2	3	4	3	5	5	4	3	4	2	3	2	4	4
L.O. 4	5	3	4	4	3	5	5	5	2	5	2	3	4	3	5	5	4	3	4	2	3	2	4	4
L.O. 5	5	3	4	4	3	5	5	5	2	5	2	3	4	3	5	5	4	3	4	2	3	2	4	4
L.O. 6	5	3	4	4	3	5	5	5	2	5	2	3	4	3	5	5	4	3	4	2	3	2	4	4

Ders/Program Çıktıları İlişkisi																								
P.O. 1	P.O. 2	P.O. 3	P.O. 4	P.O. 5	P.O. 6	P.O. 7	P.O. 8	P.O. 9	P.O. 10	P.O. 11	P.O. 12	P.O. 13	P.O. 14	P.O. 15	P.O. 16	P.O. 17	P.O. 18	P.O. 19	P.O. 20	P.O. 21	P.O. 22	P.O. 23	P.O. 24	P.O. 2
5	3	4	4	3	5	5	5	2	5	2	3	4	3	5	5	4	3	4	2	3	2	4	4	5