

GENERAL PHYSICS I

1	Course Title:	GENERAL PHYSICS I	
2	Course Code:	FZK1073	
3	Type of Course:	Compulsory	
4	Level of Course:	First Cycle	
5	Year of Study:	1	
6	Semester:	1	
7	ECTS Credits Allocated:	5.00	
8	Theoretical (hour/week):	4.00	
9	Practice (hour/week):	0.00	
10	Laboratory (hour/week):	0	
11	Prerequisites:	None	
12	Language:	Turkish	
13	Mode of Delivery:	Face to face	
14	Course Coordinator:	Prof. Dr. MUHITDIN AHMETOĞLU	
15	Course Lecturers:		
16	Contact information of the Course Coordinator:	afrailov@uludag.edu.tr, 0 224 294 16 99, UÜ Fen Edebiyat Fakültesi, Fizik Bölümü 16059 Görükle Kampüsü Bursa	
17	Website:		
18	Objective of the Course:	To give fundamental concepts and principles of laser and photonics technology	
19	Contribution of the Course to Professional Development:		
20	Learning Outcomes:		
		1	Learns development of lasers in history
		2	Has information about fundamental principles of lasers
		3	Has information about optical sensors and modulators
		4	Learns scientific and industrial application areas of lasers and photonics
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21	Course Content:		
		Course Content:	
Week	Theoretical	Practice	
1	Development of lasers in history, fundamental concepts about lasers		
2	Electromagnetic theory and Maxwell equations		
3	Reflection, refraction and absorption of light		
4	Quantum theory of light-matter interaction I		
5	Quantum theory of light-matter interaction II		

6	Diffraction and propagation of laser beam	
7	Laser types: gas, excimer, solid state and semiconductor lasers	
8	Introduction to photonics	
9	Fiber optics	
10	Optical sensors and modulators	
11	Scientific and industrial application areas of lasers and photonics	
12	Ultrafast lasers and nonlinear optics	
13	Problems	
14	General review	

22	Textbooks, References and/or Other Materials:	1. O. Svelto, Principles of Lasers, (4 ed: Plenum Pres,2007) 2. B.E.A.Saleh and M.C.Teich, Fundamentals of Photonics (2 ed John Wiley & Sons Inc, 2007) 3. A.E.Siegman, Lasers (Univ Science Boks, 1986) 4. E.Hecht, Optics, 4 ed. (Addison Wesley Longman, Inc, 2001) 5. R.W.Boyd, Nonlinear Optics (3 ed Academic Pres, 2008)
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23	Assesment
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TERM LEARNING ACTIVITIES		NUMBER	WEIGHT	
Activites		Number	Duration (hour)	Total Work Load (hour)
Theoretical		14		
Final Exam	1	100.00	3.00	42.00
Practicals/Labs		0	0.00	0.00
Self study and preparation		14	5.00	70.00
Contribution of Term (Year) Learning Activities to		0.00		
Homeworks		14	5.00	70.00
Projects		0		
Contribution of Final Exam to Success Grade		100.00	0.00	0.00
Field Studies		0	0.00	0.00
Midterm exams		0	0.00	0.00
Measurement and Evaluation Techniques Used in the				
Others		9	3.00	27.00
Final Exam	1	100.00	2.00	2.00
Total Work Load				211.00
Total work load/ 30 hr				7.03
ECTS Credit of the Course				5.00

25	CONTRIBUTION OF LEARNING OUTCOMES TO PROGRAMME QUALIFICATIONS															
	PQ1	PQ2	PQ3	PQ4	PQ5	PQ6	PQ7	PQ8	PQ9	PQ10	PQ11	PQ12	PQ13	PQ14	PQ15	PQ16
ÖK1	0	0	0	3	3	3	0	4	0	0	0	0	0	0	0	0
ÖK2	0	0	0	3	3	3	0	4	0	0	0	0	0	0	0	0
ÖK3	0	0	0	3	3	3	0	4	0	0	0	0	0	0	0	0
ÖK4	0	0	0	3	3	3	0	4	0	0	0	0	0	0	0	0
LO: Learning Objectives PQ: Program Qualifications																

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