

Fizik Bölümü / PHYSICS /						
Course Code	Course Name	Teorical	Practice	Laboratory	Credits	ECTS
FZK-4016	Lasers and Applications	3.00	0.00	0.00	3.00	6.00
Course Detail						
Course Language	: Turkish					
Qualification Degree	: Bachelor					
Course Type	: Optional					
Preconditions	: Not					
Objectives of the Course	: This course aims to teach properties and principles of the lasers, types of lasers, photodetectors, coupling of light and laser light, laser safety, application of lasers: metrological, industrial, military, health etc.					
Course Contents	: Review of lasers working principals, Laser Output and TEM modes, Properties of Lasers, Types of Lasers, Photodetectors, Coupling of light, Laser safety, Metrological application of lasers, Scientific application of lasers, Industrial application of lasers, Medical and Military application of lasers, Holography, Spectroscopic application of lasers, Project discussions					
Recommended or Required Reading	: Lasers, J.Wilson and J.F.B. Hawkes, ISBN-13: 978-0135237052 LASERS, A. E. Siegman, Stanford University, University Science Books, 1986, ISBN-13: 978-0935702118 Photonics and Laser Engineering: Principles, Devices, and Applications, Alphan Sennaroglu, ISBN-13: 978-0071606080					
Planned Learning Activities and Teaching Methods	: Instruction, Slayt presentation, Lecture					
Recommended Optional Programme Components	: Current research topics for students					
Instructors	: Prof. Dr. Mustafa Kurt					
Instructor's Assistants	: Assoc.Prof.Dr. Mustafa KURT					
Presentation Of Course	: Face to face					

Course Outcomes	
Upon the completion of this course a student :	
1	explain properties of light and laser light.
2	design any resonator and calculate the laser modes.
3	classify the laser and understand working principals each of them.
4	learn coupling of laser light to any system.
5	Laser light analyze system will be investigated.
6	investigate some applications of lasers.
7	learns the safety of lasers.

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Weekly Contents					
	Teorical	Practice	Laboratory	Preparation Info	Teaching Methods
1.Week	*Review of lasers working principals				
2.Week	*Laser Output and TEM modes.				
3.Week	*Properties of Lasers.				
4.Week	*Types of Lasers.				
5.Week	*Photodetectors.				
6.Week	*Coupling of light.				
7.Week	*Laser safety.				
8.Week	*Metrological application of lasers				
9.Week	*Scientific application of lasers				
10.Week	*Industrial application of lasers				
11.Week	*Medical and Military application of lasers.				
12.Week	*Holography				
13.Week	*Spectroscopic application of lasers.				
14.Week	*Project discussions				

Assesment Methods %	
1	Md Term Exam 1 : 40.000
2	Final : 60.000

ECTS Workload	
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