

	Course Code and Name: EEE421 Optoelectronics		Department: Electrical and Electronics Engineering				Semester 1
	Methods of Education						ECTS
	Lecture	Recitation	Lab	Project (F. Study)	Homework	Others	Total
	42	42	-	42	12	12	150
							5
Language	English						
Course Status	Elective						
Prerequisites	None						
Course Contents	Light, Light sources, Physics of semiconductors and new semiconductors, Semiconductors, Theory of light modulation, Light modulation techniques, Principles of display devices, Luminescence, New studies on display devices, Numeric Display, Injection luminescence and the light emitting diode, Thermal detectors						
Course Objectives	<ul style="list-style-type: none"> - To give the basic principles of optoelectronics - To describe the light-matter interaction - To give the principles of light modulation and modulation techniques - To teach new developments and techniques used for industrial applications. - To prepare students to conduct new research topics about optoelectronics. 						
Learning Outcomes and Competences	<ul style="list-style-type: none"> - To follow the novel technological improvements of the optoelectronics. - To develop literature searching and review techniques related to electronic applications. - To analyse and evaluate the published results about optoelectronics. - To propose the suitable solution methods for a required area related to optoelectronic systems. 						
Textbook and /or References	<ul style="list-style-type: none"> - D. Dragoman, M. Dragoman, Advanced-Optoelectronic Devices, Springer, 1999. - J.Wilson, Optoelectronics, Prentice Hall, 1989. - X.Li, Optoelectronic Devices, Cambridge University Press, 2009. 						
Assessment Criteria	Assessment Items			If any, mark as (X)		Percentage (%)	
	Midterm Exams			X		30	
	Quizzes						
	Homeworks						
	Projects			X		20	
	Term Paper						
	Laboratory work						
Other							
Final Exam			X		50		
Instructors	Prof.Dr.Şerafettin EREL						
Week	Subject						
1	Light						
2	Light sources						
3	Physics of semiconductors and new semiconductors						
4	Semiconductors						
5	Theory of light modulation						
6	Light modulation techniques						
7	Principles of display devices						
8	Luminescence						
9	Midterm Exam						
10	New studies on display devices						
11	Numeric Display,						
12	Injection luminescence and the light emitting diode						
13	Thermal detectors						
14	Photon devices						

