AYDIN ADNAN MENDERES UNIVERSITY
COURSE INFORMATION FORM

Course Title	Luminescence in Solids and Applications II								
Course Code	FZK532		Couse Level	Second Cycle (Master's Degree)					
ECTS Credit	6	Workload	150 *(Hours)*	Theory	3	Practice	0	Laboratory	0
Objectives of the Course	To get information about the fundamental principles of luminescence in solids and its applications.								
Course Content	Emission and excitation mechanism in phosphors. Application areas of luminescent materials in technology.								
Work Placement	N/A								
Planned Learning Activities and Teaching Methods	Explanation (Presentation), Experiment, Individual Study, Problem Solving								
Name of Lecturer(s)									

Assessment Methods and Criteria		
Method	Quantity	Percentage (%)
Midterm Examination	1	40
Final Examination	1	40
Assignment	7	20

Recommended or Required Reading	
1	Luminescent materials. G.Blasse, B.C. Grabmaier.
2	Luminescent materials and applications. Adrian Kitai.
3	Luminescence from theory to applications. Cees Ronda.

Week	Weekly Detailed Course Contents	
1	Theoretical	Emission mechanism in phosphors I
2	Theoretical	Emission mechanism in phosphors II
3	Theoretical	Quantum dots and nanophosphors I
4	Theoretical	Quantum dots and nanophosphors II
5	Theoretical	Phosphors for Plasma Display Panels
6	Theoretical	Quantum-Splitting Systems
7	Theoretical	Upconversion Phosphors
8	Theoretical	Midterm exam
9	Theoretical	Scintillators I
10	Theoretical	Scintillators II
11	Theoretical	LED materials and devices
12	Theoretical	Luminescent Materials for LEDs
13	Theoretical	Luminescent Materials for Phosphor–Converted LEDs
14	Theoretical	Experimental Techniques I
15	Theoretical	Experimental Techniques II
16	Theoretical	Final exam

Workload Calculation				
Activity	Quantity	Preparation	Duration	Total Workload
Lecture - Theory	14	3	3	84
Assignment	7	3	3	42
Midterm Examination	1	7	5	12
Final Examination	1	7	5	12
			Total Workload (Hours)	150
			[Total Workload (Hours) / 25*] = **ECTS**	6
**25 hour workload is accepted as 1 ECTS*				

Learning Outcomes	
1	Students can realize the emission and excitation phenomena in phosphors.
2	Students can express the technological application areas of luminescent materials.
3	Students can learn spectroscopic techniques used to measure different features of electromagnetic radiation.
4	Students can relate luminescence with other branches of physics.
5	Students can have knowledge about quantum dots and nanophosphors

Programme Outcomes *(Physics Master)*	
1	The student should conceive the concepts in physics and may apply them on her/his own
2	The student should be able to conceive the relationship between the different physics laws and integrity of them and apply them in solving different physics problems
3	The student should know the basic principles of classical, quantum and relativistic physics and use them in the solutions of problems
4	The student should be able to do research in a specific area of physics
5	The student should be able to prepare reports on papers on the subject of her/his research and present her/his research subject in scientific conferences
6	The student should be able to explain the relationship between complicated problems and basic physics laws.
7	The student should be able to use computers for solving complicated physics problems
8	The student should be able to interrelate between the theory and the experiment. If she/he is experimentalist he/she has to explain the theory behind her/his work. If she /he is a theorist she/he should has to know the experiments in her/his subject.

Contribution of Learning Outcomes to Programme Outcomes *1:Very Low, 2:Low, 3:Medium, 4:High, 5:Very High*

	L1	L2	L3	L4	L5
P1	5	4	5	5	4
P2	5	5	4	5	4
P3	4	3	4	4	5
P4	4	5	5	3	3
P5	3	2	3	4	3
P6	4	3	4	2	2
P7	2	4	4	3	4
P8	3	3	3	4	4