



Çanakkale Onsekiz Mart University

Education Information System

[DEGREE PROGRAMMES](#)[BOLOGNA](#)[THE INSTITUTION](#)[INFO FOR STUDENTS](#)You are here : [Home](#) [Bachelor's Degree \(First Cycle\)](#) [Physics](#) [Optoelectronic I](#) **[Course Information](#)**

Course Information

COURSE INFORMATION

Course Title	Code	Semester	L+U Hour	Credits	ECTS
Optoelectronic I	FZK449	7. Semester	2 + 2	3.0	8.0

Prerequisites	None
----------------------	------

Language of Instruction	Turkish
Course Level	Bachelor's Degree (First Cycle)
Course Type	Elective
Mode of delivery	Face to face
Course Coordinator	Assoc. Prof. Dr. Kıvanç SEL
Instructors	Assoc. Prof. Dr. Kıvanç SEL
Assistants	
Course Objectives	This course aims to help students learn the physics of the optoelectronic devices.
Course Content	Light, dual nature of light, refraction, interference, polarization, Maxwell equations, superposition principle, modulation of light, non-linear optics, semiconductor materials and their applications, detectors, photodetectors, LED
Course Learning Outcomes	<ol style="list-style-type: none"> 1) Apply the basic science knowledge. 2) Recognize the physical properties and applications of light 3) Define the natural phenomena. 4) Solve the problems on optical sensors 5) Relate the knowledge of different disciplines. 6) Associate the obtained information with technology and industry. 7) Communicate effectively by oral and written ways

WEEKLY COURSE CONTENT

Week	Topics	Teaching and Learning Methods and Techniques	Study Materials
1. Week	Introduction to optoelectronics	Lecture and recitation	
2. Week	Light, nature of light	Lecture and recitation	
3. Week	Polarization, superposition principle	Lecture and recitation	
4. Week	Modulation of light	Lecture, recitation and homeworks	

Quick Access

Physics

- Qualification Awarded
- Level of Qualification
- Qualification Requirements and Regulations
- Specific Admission Requirements
- Recognition of Prior Learning
- Profile of the Program
- Program Key Learning Outcomes
- Occupational Profile of Graduates
- Access to Further Studies
- Course Structure & Credits
- Exam Regulations & Assessment & Grading
- Graduation Requirements
- Mode of Study
- Programme Director(or Equivalent)
- Evaluation Questionnaire
- TYYÇ

Course Information

- Course Information
- Weekly Course Content
- Resources
- Assessment
- Course Category
- CONTRIBUTION OF COURSE LEARNING OUTCOMES TO PROGRAMME OUTCOMES
- ECTS credits and course workload

5. Week	Modulation of light	Lecture and recitation	
6. Week	Semiconductor materials	Lecture and recitation	
7. Week	Midterm exam	Written exam	
8. Week	Semiconductor materials	Lecture and recitation	
9. Week	Non-linear optics	Lecture and recitation	
10. Week	Optical applications of semiconductor materials	Lecture and recitation	
11. Week	Detectors	Lecture and recitation	
12. Week	Detectors	Lecture, recitation and homework	
13. Week	Light emitting devices	Lecture and presentation	
14. Week	Photodetectors	Lecture and presentation	
15. Week	Photodetectors	Lecture and presentation	
16. Week	Final exam	Written exam	

RESOURCES

Recommended Sources
Optoelectronics: An Introduction; J. Wilson, J. Hawkes, Prentice Hall PTR., 0136384951, (ISBN-13: 978-0136384953), 1993
'Optoelektronik', J. Wilson, J.F.B. Hawkes'ten çeviren İbrahim OKUR, Değişim Yayınları, 9789758289110, 2000
'Optics and Lasers: Including Fibers and Optical Waveguides', Matt Young, Springer, 354065741X, (ISBN13: 9783540657415), 2000

ASSESSMENT

Measurement and Evaluation Methods and Techniques		
Written exam, homeworks and presentations. (60% Final, 30% midterm, 10% homework and presentation)		
In-Term Studies	Quantity	Percentage
Mid Term Exam 1	1	40
Total	1	40
End-Term Studies	Quantity	Percentage
Final Exam	1	60
Total	1	60
Contribution Of In-Term Studies To Overall Grade		40
End-Term Studies		60
Total		100

COURSE CATEGORY

Course Category	Percentage
Core Courses	% 100

CONTRIBUTION OF COURSE LEARNING OUTCOMES TO PROGRAMME OUTCOMES

Programme Outcomes	Contribution Level	Contribution Level						
		DK1	DK2	DK3	DK4	DK5	DK6	DK7
PY1	5	5	5	5	5	5	5	5
PY2	5	5	5	5	5	5	5	5
PY3	4	4	4	4	4	4	4	4
PY4	5	5	5	5	5	5	5	5
PY5	5	5	5	5	5	5	5	5
PY6	5	5	5	5	5	5	5	5
PY7	3	3	3	3	3	3	3	3
PY8	2	2	2	2	2	2	2	2
PY9	5	5	5	5	5	5	5	5
PY10	5	5	5	5	5	5	5	5
PY11	4	4	4	4	4	4	4	4
PY12	5	5	5	5	5	5	5	5
PY13	5	5	5	5	5	5	5	5
PY14	5	5	5	5	5	5	5	5
PY15	4	4	4	4	4	4	4	4

*DK = Course's Contribution.

	0	1	2	3	4	5
Level of contribution	None	Very Low	Low	Fair	High	Very High

ECTS CREDITS AND COURSE WORKLOAD

Event	Quantity	Duration (Hour)	Total Workload (Hour)
Class Hours (14 weeks)	14	4	56
Final Exam Preparation	1	33	33
Mid Term Exam Preparation	1	30	30
Further Study	14	3	42
Final Exam	1	2	2
Mid Term Exam 1	1	2	2
Assignment 1	1	20	20
Assignment 2	1	19	19
Total Workload			204
Total Workload / 25.5 (s)			8.00
ECTS Credit of the Course			8