Course Information

COURSE INFORMATION

Course Title	Code	Semester	L+U Hour	Credits	ECTS
laser and applications	FZK426	8. Semester	3 + 0	3.0	7.0

Prerequisites	None

Language of Instruction	English
Course Level	Bacheclor's Degree (First Cycle)
Course Type	Elective
Mode of delivery	Face to face
Course Coordinator	Assist. Prof. Dr. Mustafa KURT
Instructors	Assist. Prof. Dr. Mustafa KURT
Assistants	
Course Objectives	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 Content	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, Scientefic application of lasers, Industrial application of lasers, Medical and Military application of lasers, Holography, Spectroscopic application of lasers, Project discussions
Course Learning Outcomes	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) invastigate some applications of lasers. 7) learns the safety of lasers.

WEEKLY COURSE CONTENT

Week	Topics	Teaching and Learning Methods and Techniques	Study Materials
1. Week	Review of lasers working principals	Instruction, Slayt presentation Lecture	
2. Week	Laser Output and TEM modes.	Instruction, Slayt presentation Lecture	

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

3. Week	Properties of Lasers.		
4. Week	Types of Lasers.		
5. Week	Photodetectors.	Instruction, Slayt presentation Lecture	
6. Week	Coupling of light.	Instruction, Slayt presentation Lecture	
7. Week	Laser safety.	Instruction, Slayt presentation Lecture	
8. Week	Metrological application of lasers	Instruction, Slayt presentation Lecture	
9. Week	Scientific application of lasers	Instruction, Slayt presentation Lecture	
10. Week	Industrial application of lasers	Instruction, Slayt presentation Lecture	
11. Week	Medical and Military application of lasers.	Instruction, Slayt presentation Lecture	
12. Week	Holografi	Lecture	
13. Week	Spectroscopic application of lasers.	Instruction, Slayt presentation Lecture	
14. Week	Project discussions	Instruction, Slayt presentation Lecture	
	Review	Instruction, Slayt presentation Lecture	
16. Week	Final Exam	Written Exam	

RESOURCES

Recommended Sources
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

ASSESSMENT

Measurement and Evaluation Methods and Techniques		
Mid-term, Final exam, Quiz, Project		
In-Term Studies	**Quantity**	**Percentage**
Mid Term Exam 1	1	30
Research&Project	1	20
Presentation/Seminar	1	20
Total	3	70
End-Term Studies	**Quantity**	**Percentage**
Final Exam	1	30

Total	1	30
Contribution Of In-Term Studies To Overall Grade		70
End-Term Studies		30
Total		100

COURSE CATEGORY

Course Category	Percentage
Area of Specialization Courses	% 100

CONTRIBUTION OF COURSE LEARNING OUTCOMES TO PROGRAMME OUTCOMES

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

*DK = Course's Contrubution.

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

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ECTS CREDITS AND COURSE WORKLOAD

Event	Quantity	Duration (Hour)	Total Workload (Hour)
Class Hours (14 weeks)	14	3	42
Presentation/Seminar	1	20	20
Final Exam Preparation	1	25	25
Mid Term Exam Preparation	1	20	20
Further Study	1	20	20
Research&Project	1	20	20
Assignment 1	1	20	20
Final Exam	1	4	4

Mid Term Exam 1	1	2	2
		Total Workload	173
		Total Workload / 25.5 (s)	6.78
		ECTS Credit of the Course	7