



# Çanakkale Onsekiz Mart University

Education Information System

DEGREE PROGRAMMES

BOLOGNA

THE INSTITUTION

INFO FOR STUDENTS

You are here : [Home](#) [Master's Degree& Doctorate Degree](#) [Physics \(Master\)](#) [Advance Optical Design II](#) **Course Information**

## Course Information

### COURSE INFORMATION

Course Title	Code	Semester	L+U Hour	Credits	ECTS
Advance Optical Design II	FZ 5058		3 + 0	3.0	7.5

<b>Prerequisites</b>	None
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<b>Language of Instruction</b>	Turkish
<b>Course Level</b>	Second Cycle
<b>Course Type</b>	Elective
<b>Mode of delivery</b>	Face to face
<b>Course Coordinator</b>	Assist. Prof. Dr. Mustafa KURT
<b>Instructors</b>	Assist. Prof. Dr. Mustafa KURT
<b>Assistants</b>	
<b>Course Objectives</b>	Advance use of optical design program ZEMAX, investigate optical systems and install to the software, optical aberrations for optic system, investigate the telescope types.
<b>Course Content</b>	Apochromat, Eyepiece design Aspheric Mirrors Symmetric Achromats Telescope 1: Newtonian Form Telescope 2: Cassegrain Form Telescope 3 Gregorian Form Telescope in General Mid-Term Exam Defocus, astigmatism and field curvature in optical desing. Non sequential mode in ZEMAX Detector design. Triplet lens and image compactness. MTF: Image quality Projects.
<b>Course Learning Outcomes</b>	1) develop the optical design program ZEMAX. 2) investigate optical component used in optical system design 3) understand optical aberrations in complex optical systems. 4) interpret the results of optical system analyzing. 5) make complex optical design and popular telescope design

### WEEKLY COURSE CONTENT

Week	Topics	Teaching and Learning Methods and Techniques	Study Materials
1. Week	Apochromat, Eyepiece design	Face to faceLecture	
2. Week	Aspheric Mirrors	Face to faceLecture	
3. Week	Symmetric Achromats	Face to face	
4. Week	Telescope 1: Newtonian Form	Face to faceLecture	
5. Week	Telescope 2: Cassegrain Form	Face to faceLecture	
6. Week	Telescope 3 Gregorian Form	Face to faceLecture	

Quick Access

### Physics (Master)

- 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

7. Week	Telescope in General	Face to faceLecture	
8. Week	Mid-Term Exam	Written exam	
9. Week	Defocus, astigmatism and field curvature in optical desing.	Face to faceLecture	
10. Week	Non sequential mode in ZEMAX	Face to faceLecture	
11. Week	Detector design	Face to faceLecture	
12. Week	Triplet lens and image compactness.	Face to faceLecture	
13. Week	MTF: Image quality	Face to faceLecture	
14. Week	Projects.	On computerLecture	
15. Week	Review	Face to faceLecture	
16. Week	Final Exam		

## RESOURCES

Recommended Sources
Introduction to Lens Design, Joseph M. Geary, ISBN-13: 978-094339675
Introduction to Optics, Pedrotti, ISBN: 978-0131499331
The Design and Construction of Large Optical Telescopes, Pierre Bely , ISBN-13: 978-0387955124

## ASSESSMENT

Measurement and Evaluation Methods and Techniques		
• Mid-term • Final exam • Quiz • Project		
In-Term Studies	Quantity	Percentage
Mid Term Exam 1	1	40
<b>Total</b>	1	40
End-Term Studies	Quantity	Percentage
Final Exam	1	60
<b>Total</b>	1	60
<b>Contribution Of In-Term Studies To Overall Grade</b>		40
<b>End-Term Studies</b>		60
<b>Total</b>		100

## COURSE CATEGORY

Course Category	Percentage
Area of pECIALIZATION Courses	% 100

## CONTRIBUTION OF COURSE LEARNING OUTCOMES TO PROGRAMME OUTCOMES

Programme Outcomes	Contribution Level	DK1	DK2	DK3	DK4	DK5
<u>PY1</u>	5	5	5	5	5	5
<u>PY2</u>	5	5	5	5	5	5
<u>PY3</u>	4	4	4	4	4	4
<u>PY4</u>	5	5	5	5	5	5
<u>PY5</u>	4	4	4	4	4	4

PY6	4	4	4	4	4	4
PY7	5	5	5	5	5	5
PY8	4	4	4	4	4	4
PY9	3	3	3	3	3	3
PY10	2	2	2	2	2	2
PY11	3	3	3	3	3	3
PY12	4	4	4	4	4	4
PY13	4	4	4	4	4	4
PY14	4	4	4	4	4	4
PY15	1	0	0	0	0	0

\*DK = Course's Contribution.

	<b>0</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>
<b>Level of contribution</b>	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	3	42
Presentation/Seminar	2	2	4
Final Exam Preparation	1	22	22
Research&Project	1	23	23
Assignment 1	5	10	50
Mid Term Exam 1	1	3	3
Final Exam	1	4	4
Mid Term Exam Preparation	1	15	15
Preliminary Study	14	2	28
<b>Total Workload</b>			191
<b>Total Workload / 25.5 (s)</b>			7.49
<b>ECTS Credit of the Course</b>			7

