PHYS-318 **Optics II**

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Cursus	Sem.	Type
Photonics minor	E	Opt.
Physics	BA6	Opt.

Language of teaching	English
Credits	3
Session	Summer
Semester	Spring
Exam	Oral
Workload	90h
Weeks	14
Hours	**3 weekly**
Courses	2 weekly
Exercises	1 weekly
Number of positions	

Summary

Introduction to the basic concepts of classical and modern optics. The course provides the students with tools for understanding and analysing optical phenomena and designing various optical systems.

Content

1. Coherence Theory
1.1 Spatial and temporal coherence
1.2 Partial and mutual coherence
1.3 Correlation interferometry

2. Photons
2.1 Electromagnetic field quantization
2.2 Photon statistics
2.3 Photon detection

3. Generation of Light
3.1 Optical transitions
3.2 Spontaneous and stimulated emission
3.3 Einstein's relations

4. Lasers
4.1 Amplification of light
4.2 Optical resonators
4.3 Laser characteristics

Learning Prerequisites

Recommended courses

Optics I

Learning Outcomes

By the end of the course, the student must be able to:

- Elaborate on a chapter of the course
- an exercise on a chapter of the course

Teaching methods

Ex cathedra with exercises in class