PHYS-611 **Optics and technology of liquid crystal displays**

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Cursus	Sem.	Type
Photonics		Obl.

Language of teaching	English
Credits	3
Session	
Exam	Oral
Workload	90h
Hours	**42**
Courses	24
Exercises	12
TP	6
Number of positions	

Frequency

Every 2 years

Remark

Next time: Spring 2020 - To be confirmed

Summary

Lab course - LCD assembly in laboratory

Content

1) Introduction into displays
2) Vision of the human eye
3) Description of polarized light and components
4) Polarization optics in examples
5) Liquid crystal materials
6) Textures of liquid crystals
7) Liquid crystal electro-mechanics
8) Liquid crystal optics
9) Selected LCD operation principles
10) Technology of LCD fabrication
11) Optical system components of a display
12) Illumination design

Keywords

Displays, polarization optics, liquid crystals, LCD technology

Learning Prerequisites

Important concepts to start the course

Fundamentals of optics

Learning Outcomes

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

- Define basic properties of a visual interface
- Analyze key parameters if displays

- Specify display technologies
- Choose operational principles for displays
- Judge performance of visual interfaces

Transversal skills

- Assess one's own level of skill acquisition, and plan their on-going learning goals.
- Use a work methodology appropriate to the task.
- Access and evaluate appropriate sources of information.

Teaching methods

Ex-cathedra
Labcourse (6h) to build your own liquid crystal module

Assessment methods

Oral exam

Resources

Notes/Handbook

Provided on Moodle and during the lecture.