

ENG-602

Optical fibers and fiber devices (2007)

Limberger Hans Georg

Cursus	Sem.	Type
Photonics		Obl.

Language of teaching	English
Credits	2
Session	
Exam	Oral presentation
Workload	60h
Hours	28
Courses	19
TP	9
Number of positions	12

Remark

Next time: Fall 2018 - To be confirmed

Summary

The course provides basics on optical waveguides, and components, their characterization including recent applications in telecom and sensing as well as laboratory experience on optical fiber handling and characterization.

Content

- materials for optical waveguides
- basics of optical waveguides (planar, circular)
- coupled mode theory
- waveguide technology
- basic devices including fiber Bragg gratings
- applications of optical waveguides
- fiber optic sensors
- photonic crystal fibers
- hands-on fiber handling, fiber and fiber Bragg grating characterization, FBG sensors

Keywords

Waveguides, optical fibers and devices, fiber Bragg gratings, optical fiber sensors

Learning Prerequisites**Required courses****Required prior knowledge:**

Basics in physics (electrodynamics, waves)

Basics in optics (light wave, diffraction, lasers)

Resources**Bibliography**

Fundamentals of optical waveguides / Katsunari Okamoto, 2006

Fundamentals of photonics / B.E.A. Saleh, M. C. Teich, 2007

Notes/Handbook

Handout of course slides

Websites

- <http://hl.epfl.ch/>

Moodle Link

- <http://www.moodle.ch>

Videos

- <https://www.youtube.com/watch?v=yeopfbkLjg>