Remarque

This course will no longer be taught

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

Ressources en bibliothèque
Notes/Handbook
Handout of course slides

Websites
• http://hl.epfl.ch/

Moodle Link
• http://www.moodle.ch

Videos
• https://www.youtube.com/watch?v=yeopfbLkLjg