MICRO-605  
Optical MEMS and micro-optics  
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Frequency  
Every year

Remarque  
November 12 to 15, 2018

Summary  
Micro-optics and optical MEMS comprise advanced techniques to manipulate light with superior precision and speed to realize compact yet versatile optoelectronic systems. MICRO605 covers the necessary theory, basic practical aspects, and the device and system concepts for these closely related fields

Content  
1. Microoptics
   a) Propagation of light (Fourier optics)  
   b) Diffractive optics and holograms  
   c) Examples: (microlenses, diffractive optical elements (DOEs), micromirrors)  
   d) Simulation of optics: matrix method, ABCD law, and Optical CAD  
   e) Effects of real microoptical elements in an optical path (diffraction, aberrations, fill factor)  
   f) System concepts  
   g) Microfabrication of optical microstructures (microlenses and DOEs)  
   h) Limits of miniaturization  
   i) Moving towards the nanoscale

2. Optical MEMS (MOEMS)  
   a) Review of fabrication methods and their limitations  
   b) Characterization techniques  
   c) Actuators and position sensors  
   d) Micromirrors  
   e) Tunable gratings  
   f) Tunable lenses  
   g) Tunable resonators  
   h) Examples of optical MEMS applications

Note  
Location:  
Microcity - Rue de la Maladière 71b - 2000 Neuchâtel

Learning Prerequisites
Recommended courses
• Introductory course to optics and microfabrication technologies
• Basics of chemistry and physics

Resources
Websites
• http://opt.epfl.ch/