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| **Course Title:** Optoelectronics | **Number of Units:** 1 |
| **SSD :** ING-INF/01 | **CFU:** 6 |
| **Course aims:** As optical microsystems continue to increase in functionality while decreasing in volume, integrated optics is becoming increasingly relevant for a wide spectrum of applications. In an integrated optical circuit, light is guided via optical waveguides, an approach which allows integration of numerous optical functions on a single semiconductor, glass or dielectric substrate. This course is designed to provide an overview of integrated optics, from the system point to view. The course will present the basic concepts of integrated optics, including materials and fabrication technologies as well as the major integrated optical devices. | |
| **Course Description:** The following arguments are the main topics of the course: Optical Wave Guided Theory - Channel waveguides and Fibre optics. Semiconductor Materials for integrated optics - Photodetectors and Integrated Lasers ad LEDs – Passive and Active optoelectronic integrated devices. Some technological aspects on the fabrications of integrated optoelectronics devices. Examples of Applications. | |
| **Assumed Background:** some basic concepts of electronic circuit theory; some basic concepts of quantum electronics; some basic concepts of solid state physics. | |
| **Assessment methods:** Student will be evaluated on the base of an original Elaboration and Discussion on a pre-assigned topic. And oral examination on the course contents. | |