

## **Master program: Photonics and modern optical technologies**

The teaching language of this program is English. The primary aim of this one-year course (60 ECTS credits) is to provide top-level education in photonics. It provides a multi-disciplinary programme covering basic physics, optics and material technologies, applied in different fields. The secondary aim is to provide the education required for those wishing to continue in academia on Ph.D. research projects in photonics. Furthermore, master students benefiting from this program will be able to work on today's new challenges in their applied research carriers in various high-tech companies engaged in controlling matter and optical phenomena.

The Master for Photonics Engineering covers one of the most expanding fields in physics and material sciences, dealing with the control, manipulation and monitoring of light and its interaction with matter. Graduates from the course will have gained an in-depth understanding of the fundamental properties of lasers, waveguides, new materials and practical experience in optics, optical communication, nanooptics and deposition of thin films. Students will be trained to become photonics specialists, synthesizing top-level research with a high quality education environment.

Students will follow a first semester of fundamental lectures in lasers, optics, waveguide optics and nanooptics. The training course provides a practical experience in controlling various optical phenomena. The students finish the semester after successfully defending a project. The second semester aims at giving knowledge in advanced research topics in photonics as optical communications and technology application of nonlinear optical effects. Students can choose two courses among seven proposed: biophotonics, matrix optics, modern photonics technologies, introduction to nano-technologies, photonics technologies for information storage, physical methods for thin film deposition, and design of optical systems. The training course is provided for giving the necessary practical knowledge and skills. Students obtain their master degree after defending his master thesis.

Applicants should have a Bachelor degree in physics, applied physics, electrical engineering or a related subject, with a level of achievement equivalent to a first class honours or a good second class. Other criteria that will be taken into account are English proficiency, external references and details of earlier project work.