

Light Sciences & Technologies (Light S&T)

Program Outline

The international Master in Light Sciences and Technologies (LIGHT S&T) is a Graduate Program of the University of Bordeaux. Selected as an "Initiative of Excellence", the program provides a multidisciplinary environment for first-class research and education. Scientific scope:

- › Laser & photonics
- › Extreme regimes of light
- › Materials for photonics
- › Quantum sciences & Quantum technologies
- › Condensed matter
- › Nanosciences
- › Optoelectronics
- › Photochemistry
- › Molecular photonics
- › Biophotonics & imaging

Admission Requirements

Candidates must hold a Bachelor degree in Physics, Chemistry, Biology or equivalent.

Academic Cooperation

The Master in Light Sciences and Technologies is managed by the University of Bordeaux and by the Institut d'Optique Graduate School (IOGS) for the double-degree track. Strong partnerships with:

- › Canada: Université Laval & Institut National de la Recherche Scientifique (INRS)
- › Germany: Abbe School of Photonics (FSU Jena)
- › Double degree possible with the University of Tampere (Finland)

Program duration

2 years (120 ECTS).

Language Requirements

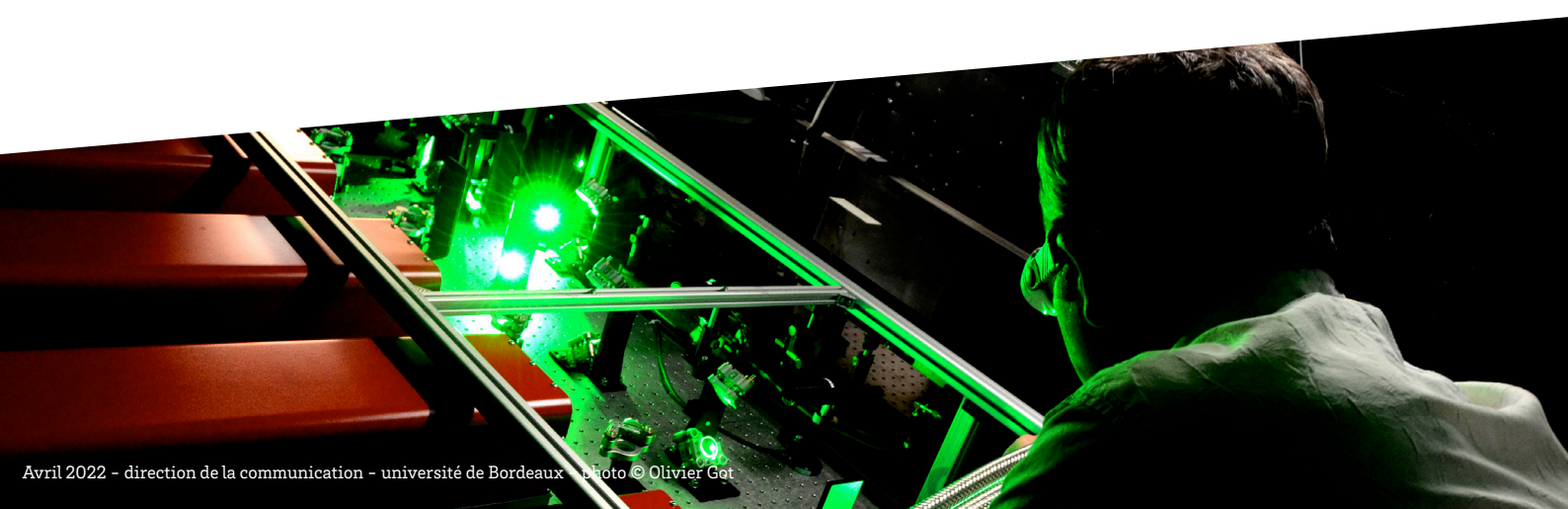
Program taught entirely in English, a B2 level or equivalent is required.

Fees and scholarships

- › Annual registration fees for all selected applicants are calculated according to the rules and regulations of the University of Bordeaux (approximately 250€).
- › Scholarships may be granted to selected applicants on demand.

Strengths

- › An integrated, interdisciplinary program, provided by both academic and industrial experts.
- › A "hands-on", cross-cutting and immersive training in research laboratories and cutting-edge facilities.
- › International mobility opportunities and / or training within the industrial sector.
- › Double degree opportunity with the Institut d'Optique Graduate School.
- › Paid internship as of the first year of the Master program. The program benefits from the support of the International Master program of the University of Bordeaux Initiative of Excellence (IdEx) and the French National Research Agency.



Year 1

Semester 1

- › Preparatory courses cover the fundamentals of modern optics, structure of matter, quantum mechanics, statistical physics and cell biology.
- › Core courses provide a comprehensive education in laser systems, light matter interaction, photonics, and materials properties.
- › Practicum courses introduce experimental techniques in laser optics, spectroscopy, quantum physics and chemistry.

Semester 2

- › Core and specialization courses.
- › Internship as practical training to research in academic or industrial laboratories.

How to apply?

Documents necessary for the selection procedure:

- › Official transcripts, copies of all previous diplomas
- › Copy of passport (or ID card if European)
- › Cover letter and CV (in English)
- › Language test results (ECTS, TOIEC, IELTS, etc.) or certificate of studies from an English speaking High School
- › If applying for a scholarship, two letters of recommendation are requested

And after?

After graduation, students are fully prepared to pursue doctoral studies and a career in research. They may also work as scientists or R&D engineers within the industrial field.

Research :

- › Doctoral studies in academic research or R&D engineering

Year 2

Semester 1

- › Specialization courses, laboratory courses delivered on cutting-edge research platforms and facilities, or/and on-demand laboratory courses in hosting research groups.

Semester 2

- › The fourth semester is dedicated to a Master thesis carried out in an advanced academic or industrial research laboratory.

Business sectors :

- › Light sources
- › Quantum technologies
- › Laser processing and 3D manufacturing
- › Sensors and multi-responsive detection systems
- › Smart and reconfigurable integrated photonics systems based on innovative hybrid nanotechnologies
- › Optical components and devices manufacturing
- › Innovative optical materials
- › Pharmaceutical companies (drug screening and testing)
- › Bio-imaging

Other opportunities :

- › Teaching, education and dissemination of scientific knowledge
- › Linking public and private actors in research, development and marketing

Website



Contact

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