RUHR-UNIVERSITÄT BOCHUM

RUB

Master‘s programme

Lasers and Photonics

Programme structure and semester breakdown

An exemplary study plan for 4 semesters:

1. Semester	2. Semester	3. Semester	4. Semester
MM: 18 CP	MM: 18 CP	MM: 0 CP	Master Thesis: 30 CP
ME+EP +FE: 12 CP	ME+EP +FE: 12 CP	ME+EP +FE: 30 CP	

Mandatory Modules (MM)	36 CP
Mandatory Electives (ME)	32 CP
Elective Practicals (EP)	6 CP
Free Elective Courses (FE)	16 CP
Master Thesis	30 CP

Mandatory Modules (MM)

- Photonics Fundamentals
- Optics Fundamentals
- Laser Fundamentals
- Fundamentals of Quantum Mechanics
- Hand-On Fundamentals
- English for Specific Academic Purposes

Mandatory Electives (ME)

- Biomedical Optics
- Electromagnetic Fields
- Fiber Optics
- Laser Chemistry
- Laser Materials Processing
- Mid-IR and THz Photonics
- Nonlinear and Complex Systems
- Numerical Photonics in Python
- Optical Communications
- Optoelectronics
- Photovoltaics
- Quantum and Nonlinear Optics
- Soft Condensed Matter Physics
- Techniques of Laser Metrology
- Ultrafast Laser Physics and Technology
- Ultrafast Laser Plasma Interaction

Elective Practicals (EP)

- Journal Club
- Laser Colloquium
- Master-Seminar Colloidal Photonic Nanomaterials
- Master-Seminar Photonics
- Master-Seminar Terahertz Technology
- Master-Seminar: The Art of Visualising Scientific Data
- Master Project Advanced Optics
- Master-Project Applied Optics
- Science Project
- Research Project
- Research Project Conference Participation
- Competitive International Research Project
- Competitive International Research Project Presentation

Free Elective Courses (FE)

You can choose additional courses from the entire Course Catalogue of Ruhr University to deepen your knowledge and complement your study programme.
In addition to technical subjects, you can add courses from science, programming, economics, languages, philosophy and more!