UCLouvain

# lbir1221

*2025*

# Wave, optical and modern physics

The version you're consulting is not final. This course description may change. The final version will be published on 1st June.

| 5.00 credits | 30.0 h + 30.0 h | Q2 |
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| Teacher(s) | Bertrand Bruno (coordinator) ;Charlier Jean-Christophe ; |
| Language : | French |
| Place of the course | Louvain-la-Neuve |
| Prerequisites | *The prerequisite(s) for this Teaching Unit (Unité d'enseignement – UE) for the programmes/courses that offer this Teaching Unit are specified at the end of this sheet.* |
| Learning outcomes | |
| Content | **Part 1: Mechanical waves**<br>1. Aspects of mechanical waves<br>2. The particular case of sound waves<br>**Part 2: Geometrical optics and physical optics**<br>1. Geometrical optics, reflection and refraction<br>2. Geometrical optics, Lenses and optical instruments<br>3. Electromagnetic waves<br>4. Physical optics, polarization and 1D interferometry<br>5. Physical optics, Diffraction and interference grating<br>**Part 3: Modern Physics**<br>1. Introduction to special relativity<br>2. Introduction to quantum physics<br>3. Nuclear physics, notions of radioactivity |
| Bibliography | Physique - Volume 3 : Ondes, optique et physique moderne, Harris Benson, Editions de Boeck |
| Faculty or entity in charge | AGRO |

| Programmes containing this learning unit (UE) | | | | |
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| Program title | Acronym | Credits | Prerequisite | Learning outcomes |
| Bachelor in Bioengineering | BIR1BA | 5 | LBIR1110 AND LBIR1121 AND LBIR1122 | |