

## Physics and Astronomy Laboratory 2 (C004218)

**Course size** *(nominal values; actual values may depend on programme)*

**Credits 6.0**

**Study time 180 h**

**Course offerings and teaching methods in academic year 2024-2025**

A (Year)	Dutch, English	Gent	practical	43.75h
			lecture	3.75h

**Lecturers in academic year 2024-2025**

Van Waeyenberge, Bartel

WE04

lecturer-in-charge

**Offered in the following programmes in 2024-2025**

	crdts	offering
<a href="#">Bachelor of Science in Physics and Astronomy</a>	6	A
<a href="#">Preparatory Course Master of Science in Physics and Astronomy</a>	6	A
<a href="#">Preparatory Course Master of Science in Physics and Astronomy</a>	6	A

**Teaching languages**

English, Dutch

**Keywords**

Physics Laboratory.

**Position of the course**

This course unit belongs to the learning pathway "Experimental physics and astronomy; data processing" in the Bachelor program Physics and Astronomy.

Engaging students in gaining significant experiences with experimental processes. Developing a large range of basic skills and tools of experimental physics and data analysis. Developing collaborative learning skills.

**Contents**

- Lectures: methodology and discussion of ICT tools
- Practicum: mixture of conventional and open investigations in the field of sound, electromagnetism, physical optics and non-classical physics.

**Initial competences**

Basic knowledge of physics and Introductory Physics Laboratory I

**Final competences**

- 1 Students must be able to set up a simple experiment.
- 2 Be able to find the relevant theories and models in standard sources and apply them correctly.
- 3 Have a critical and scientific attitude towards taking and processing data.
- 4 Communicate on scientific results in written and oral form.
- 5 Use appropriate ICT components for data processing and written and oral communication.
- 6 Being able to work together in a structured manner to successfully complete a group project.

**Conditions for credit contract**

Access to this course unit via a credit contract is determined after successful competences assessment

**Conditions for exam contract**

This course unit cannot be taken via an exam contract

**Teaching methods**

Lecture, Practical

**Extra information on the teaching methods**

Computers are used for collection, analysis and graphical display of data.

### **Study material**

Type: Syllabus

Name: Lab course notes

Indicative price: Free or paid by faculty

Optional: no

Language : Dutch

Number of Pages : 50

Available on Ufora : Yes

### **References**

- John R. Taylor : An Introduction to Error Analysis - The study of Uncertainties in Physical Measurements, Oxford University Press, ISBN 0-935702-10-5
- G.L. Squires : Practical Physics, Cambridge University Press, ISBN 0-52127095-2
- Syllabi used for Introductory Physics

### **Course content-related study coaching**

Lecturer and Teaching assistants. Use of Ufora.

### **Assessment moments**

continuous assessment

### **Examination methods in case of periodic assessment during the first examination period**

### **Examination methods in case of periodic assessment during the second examination period**

### **Examination methods in case of permanent assessment**

Oral assessment, Skills test, Participation, Presentation, Peer and/or self assessment, Assignment

### **Possibilities of retake in case of permanent assessment**

examination during the second examination period is not possible

### **Extra information on the examination methods**

Continuous evaluation during practical work of experimental and communicative skills.

Evaluation of written and oral reports. Oral questioning

### **Calculation of the examination mark**

The final score will be the calculated average of all assignments.

All lab assignments are mandatory. Students who are absent for the lab exercises (practicum) for a valid reason have to make up the missed assignments at a later time. In case the absence is unjustified or the report and/or lab notebook is submitted after the deadline, a zero mark will be given for this assignment.