GHENT UNIVERSITY

Course Specifications

Valid as from the academic year 2024-2025

Experimental Techniques in Particle Physics (C003214)

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

Credits 6.0 **Study time 180 h**

Course offerings in academic year 2025-2026

A (semester 2)	English	Gent

Lecturers in academic year 2025-2026

Lowette, Steven	VUB	lecturer-in-charge
Deroeck, Albert	UA	co-lecturer

Offered in the following programmes in 2025-2026	crdts	offering
Master of Science in Teaching in Science and Technology(main subject Physics and Astronomy)	6	A
Master of Science in Physics and Astronomy	6	A
Master of Science in Physics and Astronomy	6	A

Teaching languages

English

Keywords

Position of the course

Contents

A review is given on the cummulation of data with a general detector, and more specific with a particle detector. We will discuss how one can reconstruct the data which has been collected, for example to reconstruct the tracks of charged particles. Beyond that the course will contain information how to analyse and interprete the observations. We will focus on particle physics experiments (eg. around the Large Hadron Collider or LHC at CERN).

Initial competences

Different courses in statistics and data analyse at Bachelor level, and the introduction course of particle physics. The student has to be aware of general detection techniques.

Final competences

1 The student is able to cumulate, reconstruct and analyse data at particle physics experiments.
2 The student is able to perform research with for example particle accelerators.

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

Seminar, Lecture

Study material

None

References

References will be given by the lecturer.

http://w3.iihe.ac.be/~jdhondt/Website/WebsiteCourses.html

Course content-related study coaching

Assessment moments

end-of-term assessment

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

Oral assessment

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

Oral assessment

Examination methods in case of permanent assessment

Possibilities of retake in case of permanent assessment

not applicable

Extra information on the examination methods

Oral examination with preparation time and/or presentation of part of the course material.

Calculation of the examination mark

Oral exam determines 100% of the final mark.