Direzione Ricerca,
Innovazione e
Internazionalizzazione

UNIVERSITÀ
DI TORINO

ID

VP_086_FIS

Visiting Professor Program
Academic Year 2025/2026

TEACHING COMMITMENT: **16 hours**

COURSE TITLE

Elementary Particles 2

TEACHING PERIOD

I semester

SCIENTIFIC AREA

Experimental High-Energy Physics

LANGUAGE USED TO TEACH

English

COURSE SUMMARY

The course gives an extended overview of Quantum Chromo-Dynamics, electroweak and Higgs-boson physics, and flavour physics (2 ECTS each).
The second part will be covered by the visiting professor.
Teaching subjects include: Theory of gauge symmetries, intermediate bosons, and electroweak unification - Spontaneous symmetry breaking and the Higgs sector physics - Colliders and experiments - LEP and LHC - Experimental observation of neutral currents and W,Z - Tests the of GWS model - Measurements at the Z pole - Measurements in the LEP2 phase - Higgs boson physics at the LHC - Search for physics beyond the Standard Model.

LEARNING OBJECTIVES

Knowledge and understanding:
The course intends to complete the introduction to particle physics carried out in the teaching of Elementary Particles I by referring to the discoveries that have contributed to the validation of the

Standard Model and to recent research topics. The main purpose of the course is to complete the observational and interpretative framework of the Standard Model started in the previous courses on particle-physics subjects.
Applying knowledge and understanding:
An important part of the educational objectives of the teaching is the ability to autonomously deal with updating on a research subject and to communicate the acquired knowledge.

OTHER ACTIVITIES BESIDE THE COURSE

VISITING PROFESSOR PROFILE

The visiting professor should have previous teaching experience in the Experimental High-Energy Physics sector and possibly have a research track record in experimental physics at accelerators.

CONTACT REFERENT

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