UCLouvain

lphys2336d

2025

Astroparticle and gravitational wave physics - Neutrino physics and Gravitatinal wave 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	27.0 h + 3.0 h	Q1

Language :	English
Place of the course	Louvain-la-Neuve
Prerequisites	LPHYS2131
Main themes	PARTIM A (5 credits) : Principles and applications of particle acceleration - Accelerator physics - Precision measurements at low energies - Neutrino physics. This partim can be taken separately. PARTIM B (5 credits) : Particles and radiation of cosmic origin (including neutrinos) – Gravitational waves. This partim can be taken separately.
Learning outcomes	
Evaluation methods	Evaluation of personal projects reports. Oral exam, partly based on the projects reports.
Teaching methods	Lectures in class. Personal projects. Students can choose the subject among a list proposed by the teachers. Reading portfolio for personal study.
Content	This course consists of 2 partims, each worth 2.5 credits, thus totalling 5 credits: "Neutrino Physics" and "Gravitational-wave Physics" PARTIM "NeutrinoPhysics" (2.5 credits): physics of neutrino interaction with matters with emphasis on neutrino oscillations, neutrinos produced at accelerators and nuclear plants and cosmic neutrinos. PARTIM "Gravitational-wave Physics" (2.5 credits): Theory and detection methods in gravitational-wave physics.
Bibliography	Des diapositives de cours et des documents supplémentaires sur les sujets traités sont disponibles sur le site MoodleUCL de l'unité d'enseignement. Course slides and additional documents on the subjects addressed are available on the MoodleUCL website of the teaching unit.
Faculty or entity in charge	PHYS

Programmes containing this learning unit (UE)

Program title	Acronym	Credits	Prerequisite	Learning outcomes
Master [120] in Physics	PHYS2M	5		🔍