

3.00 credits

22.5 h + 7.5 h

Q1

Language :	French
Place of the course	Louvain-la-Neuve
Prerequisites	The knowledge of the discipline to be taught, i.e., the physics content related to the 2nd and 3rd levels of secondary education in general sciences.
Main themes	• Programs and standards • Science resources (textbooks, digital tools, educational kits) • The didactic triangle: teaching and learning • Didactic transposition and desyncretization • Initial conceptions and epistemological obstacles • The value and use of experimental activities • Didactic specificities of a physics teaching sequence at the 2nd level (D2) and the 3rd level (D3) • Problematisation and modeling in D2 and D3 • The epistemology of physics • Assessment of learning • Concepts that are challenging to teach in physics at D2 and D3
Learning outcomes	
Evaluation methods	Students enrolled in the first part of the teaching unit (Q1) are assessed as follows: Activity 1 : Daily activities (Q1): 30% of the total grade Activity 2 : Individual written exam (January) on concepts related to the didactics and epistemology of physics: 70% of the total grade To successfully complete the course in June, students must obtain a grade higher than 50% in each assessed activity. Otherwise, they will be required to take the September exam, in accordance with the professor's instructions. Attendance in this course is mandatory. Under Article 72 of the General Regulations on Studies and Examinations, the course coordinator may recommend to the examination board that a student who has attended fewer than 80% of the classes be denied registration for the January, June, or September session.
Teaching methods	The teaching activities are those recommended in secondary education: group work, lectures, flipped classrooms, practical work, laboratory sessions, etc. The didactic approach emphasizes co-construction with the students.
Content	This teaching unit is designed to equip students to become future physics teachers at the lower and upper secondary levels (D2) . It aims not only to present didactical aspects related to the teaching of physics in D2, but also to ensure the transfer and appropriation of these tools by future teachers through lesson planning and preparation. • The importance of epistemology; major epistemological perspectives • Key concepts and physical theories • Didactical specificities of a physics teaching sequence • Experimentation, the scientific approach, and inquiry-based learning in physics • Conceptualization in physics • Concepts that are particularly difficult to teach in physics • Assessment of learning in physics
Inline resources	On Moodle UCLouvain, course code LPHYS2320. The platform contains the documents presented and used during the lectures, and it also provides a space for students to submit their assignments.
Bibliography	Des ouvrages et publications scientifiques en relation avec les disciplines enseignées et avec la didactique seront présentés lors des cours.
Other infos	The course LPHYS2320A [Q1] is a compulsory didactics course for students enrolled in the Master [120] in Teaching, Section 4 and the Master [60] in Teaching, Section 5 in physics. This course focuses on the content of lower secondary education (D2). It also includes a joint component with LCHM2320A, LBIO2320A, and LPHYS2320A , covering science didactics (the first 9 hours).

Faculty or entity in charge	SC
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Programmes containing this learning unit (UE)				
Program title	Acronym	Credits	Prerequisite	Learning outcomes
Teacher Training Certificate (upper secondary education) - Physics	PHYS2A	3		
Master [60] of Education, Section 5 : Engineering	DSIR2M5	3		
Master [120] of Education, Section 4 : Physics	PHYS2M4	3		
Master [60] of Education, Section 5 : Physics	PHYS2M5	3		