




3.00 credits

22.5 h + 7.5 h

Q2

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	<ul style="list-style-type: none"> • 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) • Problematization 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	<p>Students enrolled in the course unit LPHYS2320B are assessed as follows:</p> <ul style="list-style-type: none"> • Activity 1: Daily activities, including the preparation and delivery of a practical teaching activity – 30% of the final grade • Activity 2: Individual or paired oral examination (June), covering the transfer of knowledge and concepts in physics didactics and epistemology (design and presentation of a segment of a physics learning sequence at the D3 level) – 70% of the final grade <p>Each of these activities must be passed with a minimum mark of 10/20 in order to pass the course. The principle of the <i>absorbing grade</i> applies to this course unit.</p> <p>Attendance is compulsory. In accordance with Article 72 of the General Regulations for Studies and Examinations, the course instructor may propose to the jury that a student who has not attended at least 80% of the sessions be denied registration for the January, June, or September examination sessions.</p>
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	<p>This teaching unit is designed to equip students to become future physics teachers at the lower and upper secondary levels (D3). It aims not only to present didactical aspects related to the teaching of physics in D3, but also to ensure the transfer and appropriation of these tools by future teachers through lesson planning and preparation.</p> <ul style="list-style-type: none"> • 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	<p>On Moodle UCLouvain, course code LPHYS2320.</p> <p>The platform contains the documents presented and used during the lectures, and it also provides a space for students to submit their assignments.</p>
Bibliography	Des ouvrages et publications scientifiques en relation avec les disciplines enseignées et avec la didactique seront présentés lors des cours.
Other infos	Le cours LPHYS2320B [Q2] est un cours de didactique obligatoires pour les étudiants inscrits en Master [120] en enseignement section 4 et Master [60] en enseignement section 5 en physique.

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		