UCLouvain

lfsm1105

2026

Physics

5.00 credits	37.5 h + 15.0 h	Q1

Teacher(s)	Legat Vincent ;
Language :	French
Place of the course	Louvain-la-Neuve
Prerequisites	Basic knowledge of mathematics and physics acquired in secondary school.
Main themes	• Mechanics (force, vector, vector product, moment of force, displacement, speed, acceleration, power, energy, etc.; necessary basis for understanding biomechanics and analyzing the movement of body segments) • Fluid mechanics (basis for understanding physiological concepts such as blood circulation) • Electricity and magnetism (basis for understanding physiological concepts such as action potential/nerve transmission/muscle stimulation)
Learning outcomes	**At the end of this learning unit, the student is able to :** 1 • Use the basic mathematical tools of physics (11.1 Kiné – 9.1 EP) • Interpreting a graph (11.1 Kiné – 9.1 EP) • Describe the dynamics of a solid with the tools of Newtonian mechanics (11.1 Kiné – 9.1 EP) • Use mathematical models of physics to predict the movement of a solid (11.1 Kiné – 9.1 EP) • Name and describe the basic principles of electricity and magnetism (2.1, 11.2 Physio – 9.2 EP) • Solve basic exercises in electricity and magnetism (2.1, 11.2 Physio – 9.2 EP) • Name and describe the basic principles of fluid mechanics to understand the mechanisms of blood circulation, the factors that influence blood pressure and the health consequences of circulatory disorders (2.1,11.2 Physiotherapy – 9.2 EP)
Evaluation methods	The exam is written and covers theory and exercises.
Teaching methods	The overall objective of the LFSM1105 and LFSM1109 courses is to introduce mechanics as a mathematical tool allowing the modeling and understanding of the movement of the human body. The first course (LFSM1105) introduces point mechanics while the second course (LFSM1109) introduces solid body mechanics with biomechanical applications of physiotherapy and sport.
Content	The specific objectives of this course are: • Master basic mathematical tools • Solve kinematics problems in space: projectile movements and circular movements. • Solve dynamic problems by applying conservation of momentum: Newton's laws, particle collision • Introduce the usual forces: gravity, friction, spring return and damping. • Introduce the concepts of work and energy and use conservation of energy to solve problems.
Inline resources	https://perso.uclouvain.be/vincent.legat/zouLab/lfsm1105.php
Bibliography	Le livre de référence (chapitres 1 à 8): H. Benson, Physique, 1. Mécanique, quatrième édition ou suivantes
Other infos	This course is strictly reserved for FSM students; access is not possible for other UCLouvain students.
Faculty or entity in charge	FSM

Programmes containing this learning unit (UE)				
Program title	Acronym	Credits	Prerequisite	Learning outcomes
Bachelor in Motor skills : General	EDPH1BA	5		🔍
Bachelor in Physiotherapy and Rehabilitation	KINE1BA	5		🔍