

4.00 credits

45.0 h + 15.0 h

Q2

Teacher(s)	Bastien Guillaume ;Penta Massimo ;Willems Patrick (coordinator) ;
Language :	French
Place of the course	Louvain-la-Neuve
Prerequisites	<i>The prerequisite(s) for this Teaching Unit (Unité d'enseignement – UE) for the programmes/courses that offer this Teaching Unit are specified at the end of this sheet.</i>
Main themes	The course is based on an intuitive approach of the operating principles of electronic digital and analog. Collages of circuits will also be made to understand the phenomena studied. An introduction to programming will also be proposed as part of the course. In the field of analog electronics, we consider the main passive components (resistors, capacitors, diodes, etc.), The active components (transistors, operational amplifiers, instrumentation amplifiers, etc. ...), physical sensors (force, acceleration, pressure, displacement, temperature, etc.).. Digital electronics, we will address Boolean logic and binary calculations, as well as the operation of logic gates and flip-flops, micro-controllers and PCs. The course will also include an introduction to programming.
Learning outcomes	<p>At the end of this learning unit, the student is able to :</p> <p>1 The aim of the course is to give the student a sufficient background in the field of analog and digital electronics and programming so that it can (1) to understand the operating principles of equipment used in physiotherapy (such as biofeedback, the electromyogram, isokinetic devices, etc..) and / or (2) designing simple assistive technology for people with disabilities.</p>
Content	In parallel with theoretical lessons there are exercises done with a test, voltmeter and oscilloscope. Same for programming.
Other infos	Prerequisite: Electricity and Electrotherapy Evaluation: Oral examination Format: Lecture notes available to students, books (text book) Framing: Holder (s)
Faculty or entity in charge	FSM

Programmes containing this learning unit (UE)				
Program title	Acronym	Credits	Prerequisite	Learning outcomes
Bachelor in Physiotherapy and Rehabilitation	KINE1BA	4	LKINE1006	