

## Faculty of Medicine



### KINE2201 Technology applied to rehabilitation

[45h] 4 credits

**Teacher(s):** Norman Heglund, Patrick Willems  
**Language:** French  
**Level:** Second cycle

#### Aims

At the end of this course, the student will have a working knowledge of basic analog and digital electronics. This will allow the student to understand in an intuitive way the principles of operation of electronic instruments used in kinesiotherapy, or as technological aids to handicapped people.

#### Main themes

The principle of operation of the majority of the passive electronic components (e.g. resistors, capacitors, diodes...), the active analog components (e.g. transistors, operational amplifiers, instrumentation amplifiers...) and digital components (e.g. logical gates, flip-flops, microcontrollers...) will be studied. The student will be also able to analyze and explain the operation of simple circuits (e.g. RC circuits, inverting and non-inverting amplifiers, followers, integrators, differentiators...). The principle of operation of various sensors of mechanical variables (e.g. force, displacement, speed, pressure...) and of analogical-digital converters will have also studied.

#### Content and teaching methods

This teaching is both theoretical and practical. After having explained the principles of operation of an electronic component, the students will build and test example circuits on test boards. The students will learn how to use a multimeter, function generator and a digital oscilloscope during the course of the exercises.

#### Other information (prerequisite, evaluation (assessment methods), course materials recommended readings, ...)

Evaluation : oral exam  
 Support materials : Syllabus et/ou livre(s)  
 Supervision : Co-titulaires

#### Other credits in programs

<b>IEPR3DS/TM</b>	Diplôme d'études spécialisées en sciences de la motricité (Thérapie manuelle)	(4 credits)	Mandatory
<b>KINE21</b>	Première licence en kinésithérapie et réadaptation	(4 credits)	
<b>KINE21/PS</b>	Première licence en kinésithérapie et réadaptation	(4 credits)	
<b>MD3DA/MO</b>	Diplôme d'études approfondies en sciences de la santé (sciences de la motricité)	(4 credits)	Mandatory