


 Faculty of Applied Sciences

**ELEC1102 PROJECT IN ELECTRICITY 2 : PHYSICS OF ELECTRICITY**

[+45h exercises] 3 credits

This course is taught in the 1st semester

**Teacher(s):** Christophe Craeye, Christophe Craeye (supplée Danielle Janvier), Denis Flandre, Denis Flandre (supplée Danielle Janvier), Danielle Janvier (coord.)

**Language:** French

**Level:** First cycle

**Aims**

After this course the students will be able to :

- understand and model an electrical phenomenon
- simulate this phenomenon using a numerical software

**Main themes**

Identical to the contents of the course

**Content and teaching methods**

This project consists of a detailed electrical analysis of a physical phenomenon, such as an electromagnetic transmission problem, an electric or magnetic field distribution or a p-n junction, and the development of a model for this phenomenon. The second phase of the project consists in using an of the shelf software to simulate the phenomenon and validate the model.

Teaching method :

- a bibliographical study based on the description of the problem
- an in depth understanding of the physical phenomenon
- a modelisation of the problem
- the implementation of the model in the chosen software
- test and validation of the model, using the software

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

Prerequisite :

Physical electronics (ELEC1330),

Electromagnetics (ELEC1350),

Electricity : advanced topics (ELEC1755),

or equivalent

Observation :

This project is carried out by groups of 3 to 4 students

Assessment :

The evaluation of the students will be based on various elements : the work during the semester, the final demonstration, the interim reports and the final report, the final presentation.

**Other credits in programs**

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| <b>FSA13BA</b> | Troisième année de bachelier en sciences de l'ingénieur, orientation ingénieur civil | (3 credits) |
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