Artificial organs

Lecturer
Antoine NONCLERCQ (Coordinator)

Course mnemonic
ELEC-H503

ECTS credits
5 credits

Language(s) of instruction
English

Course period
Second term

Course content

The course is divided into three major sections:

- Implant design and manufacture
- Clinical use and safety
- Practical design and implementation of an artificial organ (student project)

With the clinical application as a goal, students will be designing the electronics, manufacturing and encapsulation the implant.

Objectives (and/or specific learning outcomes)

Students will engineer artificial organs, with aim to replace a natural organ, to duplicate or augment a specific function or functions so the patient may return to a normal life as soon as possible. In this regard, students will acquire skills to design, implement and assess active medical implants to reach these challenges, for current and future demands.

Teaching method and learning activities

The lecture will be oriented to give students skills to design and implement medical devices. Students will design and manufacture an active implant.

Contribution to the teaching profile

This teaching unit links all previously acquired knowledge in active medical devices (e.g. bioelectronics, bioinstrumentation, stimulation of excitable tissues, neurology, etc.) to propose to student concrete and project-oriented solutions to design implantable active medical devices aiming to replace / improve a specific function of an organ.

Other information

Contact(s)

anoncler@ulb.ac.be

Evaluation method(s)

Other

Evaluation method(s) (additional information)

The students will present their project and explain their approach. An oral exam will allow to go deeper in the methodology and course content.

Main language(s) of evaluation

English and French

Programmes

Programmes proposing this course at the Brussels School of Engineering

MA-IRCB | Master of science in Biomedical Engineering | finalité Professional/unit 2 and MA-IREL | Master of science in Electrical Engineering | finalité electronics and information technologies/unit 2