Introduction to medical physics

Lecturers
Nicolas PAULY (Coordinator) and Stéphane SIMON

Course mnemonic
PHYS-H501

ECTS credits
3 credits

Language(s) of instruction
English

Course period
First term

Course content

Production and use of ionizing radiation in medicine (radiation therapy, nuclear medicine and radiology), measurement and optimization of doses delivered to patients, first approach of quality process maded by the radiophysicists.

Objectives (and/or specific learning outcomes)

Introduce the usage of radioactive sources and ionizing radiation for therapy and diagnostic

Pre-requisits and co-requisits

Pre-requisites courses

MATH-H507 | Monte Carlo Methods | 2 crédits

Teaching method and learning activities

course + exercises

Contribution to the teaching profile

This teaching unit contributes to the following competences:

- Measurement of the physical quantities linked to the living, both morphological and functional
- Treatment and analysis of signals, 1D, image, video, in particular from medical devices
- Integration of normative (certifications), ethical and legal aspects related to biomedical devices and practices, analysis of safety aspects (including radioprotection) and determination of quality processes.

References, bibliography and recommended reading

- Handbook of Radiotherapy Physics, P. Mayles et al., Taylor and Francis Group, 2007- The Essential Physics of Medical Imaging, J. Bushberg et al., Lippincott Williams and Wilkins, 2002

Other information

Contact(s)

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Evaluation method(s)

Oral examination

Evaluation method(s) (additional information)

oral examination

Determination of the mark (including the weighting of partial marks)

85% examination note, 15% laboratory note

Main language(s) of evaluation

English

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-IRPH | Master of science in Physical Engineering | finalité Professional/unit 2