

# 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

- 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

## 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 made by the radiophysicists.

## Objectives (and/or specific learning outcomes)

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

## Pre-requisites and co-requisites

### Pre-requisites courses

MATH-H507 | Méthodes de Monte Carlo | 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

## 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