## Nuclear measurement techniques

#### Lecturer

Nicolas PAULY (Coordinator)

**Course mnemonic** PHYS-H407

ECTS credits 5 credits

Language(s) of instruction English

**Course period** Second term

#### Course content

Interactions of radiations with matter. Nuclear detectors (physical principles, signals). Instrumentation (description and treatment of the signal). Experimental methods (description, analysis of results, simulations).

# Objectives (and/or specific learning outcomes)

Understanding of the physical processes of the nuclear detectors and understanding of the experimental methods, including statistical aspects.

## Teaching method and learning activities

Lectures (24h) + practical sessions in laboratory (36h)

#### Contribution to the teaching profile

This teaching unit contributes to the following competences:

> Treatment and analysis of various signals (1D, image, video,...), in particular those obtained from medical devices

## References, bibliography and recommended

reading

G.F. Knoll, Radiation Detection and Measurement, Wiley, 2000

## Other information

#### Contact(s)

Pauly Nicolas: Department of Métrologie Nucléaire Building D, door B, Niv 3, local 150

## Evaluation method(s)

Other

Evaluation method(s) (additional information) Written examination + laboratory reports

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

Written examination: 75% of the final note; Laboratory reports: 25% of the final note

Main language(s) of evaluation

### 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 1

PHYS-H407 | 2023-2024