



MS-NUAP | 2024-2025

# Specialized Master in Nuclear Engineering

The 2024-2025 programme is subject to change. It is provided for information purposes only.

## Programme mnemonic

MS-NUAP

## Studies level

Advanced master

## Learning language

english

## Schedule

office hours

## Studies category / subcategory

Sciences and technics / Engineering sciences

## Campus

Other campus

## Programme's added value

BNEN combines the knowledge and experience in nuclear education of six major Belgian universities together with the Belgian nuclear research centre and offers a unique and broad Master-after-Master program in nuclear engineering in close interaction with nuclear research and industry.

## Teaching methods

Could you please connect and check <http://bnen.sckcen.be/>

## Job opportunities

Could you please connect and check <http://bnen.sckcen.be/>

## Programme objectives

Registering to this master-after-master program gives access to the Belgian Nuclear higher Education Network (BNEN).

The condensed - 60 crédits in one year, including a master thesis – BNEN program allows the students to acquire all necessary scientific and technical background and skills to develop a career in the field of nuclear applications, mainly for electricity production.

Students are offered the opportunity to coherently take a part of their basic nuclear education at different places in Europe while cumulating credit units. Practical laboratory sessions and advanced subjects taught in a modular way are also offered to enrich the program.

## Contacts

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## Jury President

Pierre-Etienne LABEAU

## Jury Secretary

Peter Baeten

# Specialized Master in Nuclear Engineering

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**Unique year** | MS-NUAP

## Compulsory courses

- CHIM-Y600**     **Nuclear materials** | Marc SCIBETTA  
 ⌚ 3 credits   📅 academic year   🗨 English  
 KU Leuven : 2 ECTS - ULiège: 1 ECTS
- ELEC-Y600**     **Introduction to nuclear energy**  
 ⌚ 3 credits   📅 academic year   🗨 English  
 KULeuven - 3 ECTS
- MECA-Y600**     **Nuclear thermal hydraulics**  
 ⌚ 5 credits   📅 academic year   🗨 English  
 UCLouvain : 5 ECTS
- PHYS-H602**     **Introduction to nuclear physics and measurements**  
 ⌚ 3 credits   📅 academic year   🗨 French  
 ULB - 3 ECTS
- PHYS-Y601**     **Nuclear reactor theory**  
 ⌚ 6 credits   📅 academic year   🗨 English  
 KULeuven : 2 ECTS - UGent : 2 ECTS - VUB : 2 ECTS
- PHYS-Y602**     **Nuclear fuel cycle**  
 ⌚ 3 credits   📅 academic year   🗨 English  
 ULiège : 3 ECTS
- PHYS-Y603**     **Radiation protection**  
 ⌚ 3 credits   📅 academic year   🗨 English  
 UGent : 3 ECTS
- PHYS-Y608**     **Safety of nuclear power plants**  
 ⌚ 5 credits   📅 academic year   🗨 English  
 UGent : 3 ECTS - ULB : 2 ECTS

## Elective modules

*A total of nine credits chosen from the following*

- PHYS-Y605**  
(optional)     **Advanced nuclear materials** | Steven Van Dijck  
 ⌚ 3 credits   📅 academic year   🗨 English  
 KULeuven : 2 ECTS - ULiège : 1 ECTS
- PHYS-Y607**  
(optional)     **Nuclear and radiological risk governance** | Greet JANSSENS-MAENHOUT and Fernand VERMEERSCH  
 ⌚ 3 credits   📅 academic year   🗨 English  
 UGent : 1 ECTS - UCLouvain : 2 ECTS
- PHYS-Y609**  
(optional)     **Advanced radiation protection/radiation ecology**  
 ⌚ 3 credits   📅 academic year   🗨 English  
 UGent : 3 ECTS

PHYS-Y610  
(optional)

### Advanced courses of the nuclear fuel cycle

3 credits academic year

ULiège : 3 ECTS

PHYS-Y611  
(optional)

### Advanced course elective topic

3 credits academic year

VUB : 3 ECTS

PHYS-Y616  
(optional)

### Advanced nuclear reactor physics and technology

3 credits academic year English

UCLouvain : 3 ECTS

## Memory

MEMO-H601

### Master thesis

20 credits academic year English