GNUC2MC - Introduction

Introduction

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ATTENTION : Register for this programme through the institution responsible for its administrative management, i.e. ULB, not through the UCLouvain Enrolment Office.

The master offers:

- the possibility of acquiring the skills necessary for designing and operating electronuclear power plants;
- a specialisation in nuclear sciences and technologies;
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GNUC2MC - Teaching profile

Learning outcomes

The objective of the Complementary Masterâ€™s course in Nuclear Engineering is to enable students to acquire the high level skills needed to design and run electro-nuclear power stations, taking into account the legal prescriptions and regulations relating to the safety of these plants. In a wider perspective, to enable students to acquire a university-level specialisation in nuclear science and technology which is recognised at the European level

Programme structure

This program comprises a core curricululum of 56 credits and 4 complementary credits to be chosen from the advanced seminars, the organisation of which varies from year to year in function of the high level scientific skills present at the Research Centre in Mol. By way of example, the following seminars were organised in recent years:

- Advanced seminar on accelerators and time of flight experiments
- Radioisotopes
- Safeguards
- Nuclear energy, future prospects
- Electricity, energy vector of the future
- Recycling of previously radioactive material
- Emergency Planning
- Experience with full scale MCNP modeling of research reactors
- Minimising waste production in a complex nuclear center : from conception to the decommissioning, the SCK.CEN reference case.

This program is set out in detail on the website of SCK.CEN à Mol at the address : https://www.sckcen.be/en/sck-cen-academy/training-courses/academic-education

Core curriculum of the Complementary Master in Nuclear Engineering

Electives of the Complementary Master in Nuclear Engineering

GNUC2MC Programme

Detailed programme by subject

CORE COURSES [51.0]

- Mandatory
- Optional
- Not offered in 2023-2024
- Not offered in 2023-2024 but offered the following year
- Offered in 2023-2024 but not the following year
- Not offered in 2023-2024 or the following year
- Activity with requisites
- Open to incoming exchange students
- Not open to incoming exchange students
- [FR] Teaching language (FR, EN, ES, NL, DE, ...)

Click on the course title to see detailed informations (objectives, methods, evaluation...)

LBNEN2000	Nuclear reactor theory (Centre d'étude nucléaire-Mol)		[CN] [q2] [] [6 Credits]

The programme's courses and learning outcomes

For each UCLouvain training programme, a reference framework of learning outcomes specifies the the skills expected of every

3) Candidates with a foreign higher education degree may be admitted within the limits stipulated in the Decrees (Decree of the French-speaking Community of 31 March 2004 on the definition of higher education and its integration in the European system of higher education and the refinancing of universities ; corresponding Decrees of the Dutch-speaking Community), following evaluation and approval by the Teaching Committee and respecting the regulations and procedures of the universities participating in the program.

Teaching method

Access to the resources (researchers and laboratories with their major infrastructure) of the Centre dâ€™Etudes Nucléaires (SCKâ€¢CEN) is indispensable to ensure the pedagogical quality of this program. The interuniversity partnership guarantees the availability of the diversity of expertises necessary, as well as the quality of the teaching staff.

The modular system of each course concentrated over a limited period from several days to three weeks facilitates the participation of students engaged in professional life as well as foreign students.

Evaluation

The evaluation methods comply with the regulations concerning studies and exams (https://uclouvain.be/fr/decouvrir/rgee.html). More detailed explanation of the modalities specific to each learning unit are available on their description sheets under the heading "Learning outcomes evaluation method".

The learning activities are evaluated according to the rules in force at the University (see examination regulations), viz. written and oral examinations, laboratory examinations, individual and group work, public presentations of projects, and thesis defence.

Mobility and/or Internationalisation outlook

The courses and practical work are given in English.

Since the foundation of the BNEN consortium (Belgian Nuclear higher Education Network), which has been in charge of the organisation of this program, the international dimension has been provided by student exchanges, as well as by the offer of three courses especially adapted to exchanges within the European Interuniversity Association ENEN (European Nuclear Education Network - http://www.enen-assoc.org/). Students have the possibility of following part of their course in another university of this association. If they have acquired 20 credits in this context, the ENEN association will award the certificate "European Master of Science in Nuclear Engineering". Some of these mobility exchanges can be financed within the Erasmus program.

Possible trainings at the end of the programme

The program is organised conjointly by six universities: UCL, ULg, ULB, KULeuven, UGent, VUB. The courses are given in rooms made available to the universities by the Study Centre for Nuclear Energy at Mol (SCK.CEN). The practical work relies on the substantial infrastructure and laboratories of the Centre. The researchers of the Centre also assist with the practical work.

Contacts

Curriculum Management

Entity

Structure entity	SST/IMMC
Denomination	(IMMC)
Sector	Sciences and Technology (SST)

- Thermodynamics and fluid mechanics (TFL)
- Laboratoire d'Analyse, Caractérisation et Mise en oeuvre (ACAM)
- Conception, Réalisation et Essais de Dispositifs ElectroMécaniques (CRDM)
- Laboratoire Essais mécaniques, Structures et génie civil (EMSC)

Academic supervisor: Yann Bartosiewicz (https://uclouvain.be/repertoires/yann.bartosiewicz)

Jury

- Président du Jury: Jean-Didier Legat