



# Monthly Bulletin

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AUGUST 1ST, 2019

ISSUE NO. 15

## In this bulletin

### THE SUCCESS OF OUR COURSES

In this issue, while recalling already planned courses or **newly envisaged ones**, we wish to communicate something about the **level of success of our courses**.

At the time of writing, in front of **295 applications** received on the website devoted to collect them (<http://www.enen.eu/en/projects/annette/eoi1.html>), we counted **a preliminary number of actual participations in our courses in the order of 190 !** This adds to the **more than 50 participants in the ANNETTE Summer School** organised by Aalto University, a very successful event !

These numbers **do not include courses that are scheduled for autumn** and other already run on which we have still to receive reports from Course Providers. Let us express some **prudent degree of satisfaction for this result**; an analysis of the applications showed that most of the applicants are professionals, suggesting that we hit our intended target.

However, **challenges are still there for setting up our "Master"** that should follow the pilot courses. We will devote an entire issue of the bulletin to this aspect in the next future.

We highlight **new advertised courses in this issue**:

- Course on **Protecting Nuclear Industry** by UCLAN (21-24 October 2019)
- **Nuclear Safety Culture in the ITER Project: The Supply Chain** (September – December 2019)
- **Final Stage of the Nuclear Lifecycle** by JRC-KIT (2-6 December 2019)
- **ANNETTE Training Course on Nuclear Safeguards**, by ESARDA, Week 2: Forschungszentrum Jülich, (11-15 Nov 2019)

**WHILE PLANNING FOR THE REMAINING COURSES  
LET US WISH YOU A HAPPY SUMMER !**

We again retrieve the suggestion that, **if you apply for support by the ENEN+ project, you should prompt the Course Providers about this request, soon at the time of being contacted.**

Please, also read the ENEN+ **Mobility Manual** for knowing the conditions for applications and avoid rejection.

**Thanks for your interest in our courses !**

[Link to the course application page](#)

[Link for asking support for mobility to the ENEN+ project](#)

**PLEASE LOOK ALSO AT THE COMPLETE OFFER  
FOR LAST MINUTE SELECTION OF COURSES ALREADY ADVERTISED**

**Course on  
Experimentation in  
Josef Underground  
Facility**

**A HANDS ON  
TRAINING in real  
applications**

**2 - 4 September 2019**



**Course Outline and Content**

The course is aimed to provide hands-on experience in laboratory and in-situ testing of soils and rock mass related to geological disposal. The program of the three days training is conceived to progress from laboratory to the real scale tests in the Underground facility Josef. The content utilize long term experience with real geotechnical experiments and applications. It includes tests in a laboratory and in-situ with real tools and equipments, data collection and evaluation of results.

**The course is made of the following units:**

Unit 1: Geotechnical testing of soils (bentonite as a buffer & backfill)

- Geotechnical laboratory tests on soils
- Installation of bentonite seal by spraying and sampling and evaluation of bentonite seal

Unit 2: In-situ testing of the rock mass

- In-situ tests on water (gas) permeability of the rock mass
- Thermometer assembly and installation
- Data transfer and processing

**Requested Background**

The learner is assumed to have basic knowledge of soil and rock mechanics. More in course details.

**Course fee and application**

- no fee to Annette participants
- In order to apply for this course, please enroll at the [ANNETTE application page](#)
- Maximal number of attendees: 8

**Method of Delivery:** hands-on training in laboratory and underground

**Trainers:** Radek Vasicek (course leader, [radek.vasicek@fsv.cvut.cz](mailto:radek.vasicek@fsv.cvut.cz)), Jiri Svoboda, Jiri Stastka (all CTU, the Josef facility)

**Place of delivery:** The Josef Underground Laboratory ([map](#)); Smilovice 93, 262 03 Chotilsko; Czech Republic

**Accommodation and transport:** Self organised and self paid by the attendees; for more information and **advice** please contact our administrative contact

**Administrative contact:** Dana Pacovska - [pacovska@fsv.cvut.cz](mailto:pacovska@fsv.cvut.cz)

**Date of delivery:** 2 - 4 September 2019

**Organised by:** Centre of Experimental Geotechnics, Faculty of Civil Engineering, Czech Technical University in Prague, Thakurova 7, 166 29 Prague 6, Czech Republic

**Regulation and its  
Application in Nuclear  
Projects**

**Framatome (Karlstein,  
close to Frankfurt),  
Germany**

**September 9th and  
10th, 2019**



**FUSENET**  
The European Fusion Education Network

**framatome**

**Course Outline**

The course is directed towards engineers that are employed by the ITER Organization, Fusion for Energy, or their sub-contractors in the ITER project (down to the lowest level, i.e. in the supply chain), or in any other supply chain company active in fission new build projects. Preferably they should be active in ITER (or any other fission/fusion new build) related design, procurement, manufacturing, construction, assembly, and commissioning of ITER (or fission/fusion new build) equipment.



The course will impart specific knowledge on nuclear licensing and the impact of licensing requirements on the design as well as on subsequent down-stream activities. Furthermore, it will be complemented by additionally training the skills that are necessary in the nuclear environment of a fission or fusion project like ITER.


**Course Content**

The training contains the following:

1. Introduction to and overview of national / international nuclear law(s) and related regulation, involved national and international organizations (e.g. ASN, IAEA),
2. Main licensing activities / deliverables / responsibilities,
3. Overview of Codes and Standards (C&S) and introduction to relevant C&S, their impact on regulation or licensing,
4. Introduction to and overview of nuclear risks, safety objectives, and derived requirements,
5. Basic safety principles: management / technology / process oriented (e.g. defense in depth),

	<p>6. Introduction to (deterministic and probabilistic) safety analysis and related tools used by different technical disciplines for simulations in support of licensing,  7. How to integrate nuclear regulation requirements into fusion projects, and perform requirements management,  8. How to apply nuclear regulation requirements in design/manufacturing/construction/assembly/commissioning activities.</p> <p><b>REQUESTED BACKGROUND</b>  The targeted trainees should have undergone a suitable technical engineering education, preferably in a technical subject matter important for their actual job position. They shall be able to understand the basic design of a power plant and its systems and components, and the technical basics (physics/chemistry resp. design/operation) of a nuclear (fission or fusion) reactor.</p> <p><b>APPLY HERE</b>  In order to apply for this course, <b>please enroll at the <a href="#">ANNETTE application page</a> and then contact:</b>  Goerge Baltin, Email: <a href="mailto:goerge.baltin1@framatome.com">goerge.baltin1@framatome.com</a></p> <p><b>CONTACT</b>  For questions and further information, please contact:  Goerge Baltin, Course Manager at Framatome Training Center Germany  Email: <a href="mailto:goerge.baltin1@framatome.com">goerge.baltin1@framatome.com</a></p>
<p><a href="#"><u>Hands on OpenFOAM CFD simulations for heat and mass transfer in industrial processes.</u></a></p> <p><b>By Technical University of Catalonia(UPC) Barcelona (Spain)</b></p> <p><b><u>September 16th to 20th, 2019</u></b></p>	<div data-bbox="491 745 595 846">  </div> <div data-bbox="612 754 967 835"> <p><b>UNIVERSITAT POLITÈCNICA DE CATALUNYA</b>  <b>BARCELONATECH</b></p> </div> <p><b><u>Course Description</u></b>  The course objective is to prepare the assistants to bring to practical cases the best practices and guidelines on Computational Fluid Dynamics (simulations Best practices and guidelines are derived from the CFD fundamentals The required theoretical background will be provided Along the course, the case method is used to introduce the CFD fundamentals and approaches The cases will be related to nuclear technology but the concepts are valid in any other technical field The covered topics are</p> <p><b><u>Topics covered</u></b></p> <ol style="list-style-type: none"> <li>1) Diffusive heat transfer: Introduction to CFD, boundary conditions, the Finite Volume method for diffusion problems</li> <li>2) Hydrodynamics and turbulence: The conservative laws of fluid motion, the Finite Volume method for advection diffusion problems, algorithms for pressure velocity coupling</li> <li>3) Thermal hydraulics diffusive convective heat transfer: CFD strategies for temperature velocity coupling, finite Volume method for unsteady flows</li> </ol> <p>After the introduction to each case, its fundamentals, modelling and case set up, the instructors will provide indications on how to proceed with the computer simulations Attendees will have time to perform the simulations on their own Eventually common conclusions will be shared and best practices and guidelines for successful simulations will be retrieved</p> <p><a href="https://ant.upc.edu/en/activities">Link to the full description of course conditions (https://ant.upc.edu/en/activities)</a></p>
<p><b><u>MASSIVE OPEN ONLINE COURSE ON NUCLEAR SAFETY CULTURE</u></b></p> <p><b>By TECNATOM and UNED</b>  <b>October 1<sup>st</sup>, 2019</b></p>	<div data-bbox="491 1641 903 1709">  </div> <p><b>MOOC (Massive Open Online Course):</b>  <b><u>Introducing safety culture and its application to the nuclear field</u></b>  A completely online, free, international course. General information about the MOOC is available in the link above.  30 h of participant work – 1 ECTS  Divided in 4 independent NOOCs (Nano Open Online Courses):</p> <p><b><u>NOOC I. What is safety culture?</u></b>  <b><u>NOOC II. Understanding Nuclear Safety Culture</u></b>  <b><u>NOOC III. Developing leadership for safety</u></b>  <b><u>NOOC IV. Refreshing Nuclear Basics</u></b></p> <p><b>Open now the free registration, by clicking on each NOOC above.</b>  We are actually in the production process. The course has been delayed and the starting has been postponed to <b>October 1<sup>st</sup>, 2019</b>. The course will be active during three weeks.</p>

	<p>If you want to receive information about the MOOC/NOOCs, please fill the form <a href="#">here</a></p> <p>We highly thank those advertising this initiative within the nuclear sector, but as well towards professionals from other industries (specially high-risk industries), as well as master students of nuclear and other technical studies, to gather a varied audience to enhance global networking and a collaborative learning experience. This course will allow a research study and its dissemination is crucial to achieve massive participation from the main target groups</p>
<p><b><a href="#">Nuclear Safety Culture in the ITER Project:</a></b> <b><a href="#">The Supply Chain</a></b></p> <p><b>Online Course,</b> <b>Course duration ~ 1 hour</b></p> <p><b>September –</b> <b>December 2019</b></p>	<div data-bbox="496 293 767 367">  </div> <p><b><u>Course Objective and Outline</u></b></p> <p>The training shall impart knowledge on nuclear safety culture, and motivate the trainees to implement continuously and consistently all traits of a nuclear safety culture in their actual job positions within the ITER project.</p> <p><b>The course consists of the following units:</b></p> <ul style="list-style-type: none"> <li>• Introduction and Overview</li> <li>• Basics of Fusion</li> <li>• Why Nuclear is different!</li> <li>• Safety objectives and functions at ITER</li> <li>• Contribution of a safety culture to achieving safety objectives</li> <li>• Nuclear Safety Culture: commitment of management and individuals</li> </ul> <p><b><u>Requested Background</u></b></p> <p>The training shall mainly target workers or other personnel that are employed by sub-contractors of the ITER project (down to the lowest level), and that are active in ITER related manufacturing, construction, assembly, and commissioning of ITER equipment.</p> <p>The trainees should have undergone at minimum a suitable vocational training, preferably in a technical subject important for their actual job position. They should be able to understand basic technical descriptions (including schematics) of a power plant and its systems and components.</p> <p><b><u>Course fee and application</u></b></p> <ul style="list-style-type: none"> <li>• no course fee</li> <li>• In order to apply for this course, please enroll at the <a href="#">ANNETTE application page</a></li> </ul> <p><b><u>Method of Delivery:</u></b> online training through a course provided in UNED Abierta Virtual Learning Platform</p> <p><b><u>Administrative contact:</u></b> Christian Schoenfelder – <a href="mailto:christian@schoenfelder.training">christian@schoenfelder.training</a></p> <p><b><u>Date of delivery:</u></b> September - December 2019</p> <p><b><u>Organised by:</u></b> FuseNet, the European Fusion Education Network, and UNED, the Spanish National Distance Education University</p>
<p><b><a href="#">Course on Protecting the Nuclear Industry</a></b> <b>21 - 24 October 2019</b></p>	<div data-bbox="491 1361 708 1494">  </div> <p><b>Protecting the Nuclear Industry</b></p> <p><b><u>Workshop outline and contents</u></b></p> <p>The workshop will address international and national nuclear security, but with emphasis on the UK position. The development of a comprehensive nuclear security culture to prevent, detect, delay and respond to, theft, sabotage, unauthorized access, illegal transfer or other malicious acts involving radioactive materials will be explored.</p> <p>Attendees will gain:</p> <ul style="list-style-type: none"> <li>• understanding of the international approach to nuclear security regulation and knowledge of the historical and current provision for regulation of the UK's civil nuclear facilities.</li> <li>• detailed knowledge of the UK approach to guard force protection.</li> <li>• detailed knowledge of governance, responsibilities and accountabilities for nuclear security.</li> <li>• knowledge of progress made in effective integration of nuclear safety with nuclear security.</li> <li>• appreciation of emergency planning.</li> </ul> <p><b><u>Date of delivery</u></b> 21 - 24 October 2019</p>

	<p><b>Fees</b> As this workshop is part of ANNETTE project, there is <b>no charge</b>, except for £25 per day to cover refreshments and lunch</p> <p><b>Application</b>  For further details and registration, please apply to: <a href="mailto:PTNISymposium@uclan.ac.uk">PTNISymposium@uclan.ac.uk</a> Please, <b>make sure you register also at the website of ANNETTE</b>.</p> <p><a href="#">Download the flyer of the course here</a></p>
<p><b><a href="#">ANNETTE Training Course on Nuclear Safeguards</a></b></p> <p><b>Week 2:</b> <b>Forschungszentrum Jülich, 11-15 Nov 2019</b></p>	<div></div> <p><b>ANNETTE Training Course on Nuclear Safeguards</b> Week 2: Forschungszentrum Jülich, 11-15 Nov 2019</p> <p><b>Objective</b> The course is aimed to provide an introduction to nuclear safeguards and the non-proliferation of nuclear weapons. Following the efforts of the European Safeguards Research and Development Association (<a href="#">ESARDA</a>), this course contributes to enlarge the number of university students and young professionals aware of these themes. The first week was organised and hosted by the <a href="#">SCK•CEN Academy for Nuclear Science and Technology</a> in Mol/Belgium from 4 to 8 February 2019 (<a href="#">Programme</a>) The second week is organised and hosted by Forschungszentrum Jülich in Germany from 11 to 15 November 2019. The course is part of the H2020 "Advanced Networking for Nuclear Education and Training and Transfer of Expertise" (<a href="#">ANNETTE</a>) project, coordinated by the European Nuclear Education Network (<a href="#">ENEN</a>).</p> <p><b>Topics of week 2 (<a href="#">Programme</a>)</b></p> <ul style="list-style-type: none"><li>• Refresher of week 1</li><li>• Implementation of safeguards</li><li>• Physical protection</li><li>• Export control</li><li>• Probabilistic and statistical methods for nuclear safeguards</li><li>• Destructive analysis</li><li>• Containment and surveillance</li><li>• Novel technologies, approaches and methodologies</li><li>• Upcoming challenges</li></ul> <p><b>Target audience</b> This training course is targeted to university students and young professionals working in the nuclear field.</p> <p><b>Language</b> The training course will be given in English.</p> <p><b>Required knowledge</b> The workshop is open to students and professionals with an interest in nuclear safeguards and non-proliferation. Basic knowledge of the nuclear fuel cycle is recommended but not mandatory. The participation in the first week of the course is <b>not</b> obligatory.</p> <p><b>Registration</b> You can register for the course from 1 August to 11 October 2019. The minimum number of participants is 5, the maximum number is 20. Participants are required to register twice: 1. Registration at ENEN webpage (<a href="#">Link</a>) 2. Registration by email to Dr. Thomas Krieger, <a href="mailto:t.krieger@fz-juelich.de">t.krieger@fz-juelich.de</a> and to pay a <b>registration fee of 100 Euro</b>. Following your registration you will receive an invoice from Jülich including instructions for this payment. The registration is only complete as soon as we have received the full payment (see the note below for reimbursement). The registration fee includes:</p> <ul style="list-style-type: none"><li>• Participation to the course, practical exercises and technical visits;</li><li>• Coffee breaks</li><li>• Lunch breaks</li><li>• Closing dinner on Thursday, 14 November 2019</li><li>• Training material and documentation</li><li>• Certificate of attendance</li></ul> <p>Note: In case that less than 5 participants have registered until 11 October 2019, the registration fee will be reimbursed. Refunds will not apply for cancellations or no show of participants.</p> <p><b>Accommodation</b> Participants are requested to make and pay their own travel arrangements. Pre-registration will be made at <a href="#">Best Western Hotel Royal</a> in the centre of Aachen.</p>

	<p><b>Transport</b> Daily transport will be provided by the Best Western Hotel Royal and Forschungszentrum Jülich.</p> <p><b>Venue</b> <a href="#">Forschungszentrum Jülich</a>, IEK-6</p>
<p><b><a href="#">JOINT JRC-KIT Course on Final Stage of the Nuclear Lifecycle</a></b> <b>Karlsruhe, Germany</b> <b>December 02-06, 2019</b></p>	<div data-bbox="501 277 874 389">  </div> <p><b>Final Stage of the Nuclear Lifecycle</b></p> <p><b>Course Outline and Content</b> The five-day teaching module is open to all interested graduate students, Ph.D. students, post-docs, professionals and is limited to 15 participants. It will provide advanced level understanding of final stage of the Nuclear Lifecycle including the dismantling and decommissioning of nuclear facilities and the radioactive waste management. The course will comprise lectures by experts and laboratory and facilities visits with practical training.</p> <p><b>Course contents</b></p> <ul style="list-style-type: none"> <li>• Radioactive waste: nuclear waste streams, safety relevant properties, management of damaged nuclear fuels</li> <li>• Decommissioning of nuclear facilities: decommissioning of nuclear research facilities, operational radiation protection</li> <li>• Radioactive waste management: conditioning and interim storage, long-term safety assessment of nuclear waste disposal, safety case and international site selection processes</li> <li>• Acceptance and implementation: social and governance aspects of nuclear waste management, safeguard issues for geological repositories</li> </ul> <p><b>Announcement:</b> <a href="#">July 25th, 2019</a></p> <p><b>Requested Background</b> The learner is assumed to have basic knowledge of Mathematics and Physics. Basic knowledge on Nuclear Science and Technology is also an important component and learner can get or refresh it following the GENTLE <b>MOOC</b> (free registration on the EdX platform). Therefore, is recommended to follow the MOOC before accessing the course.</p> <p><b>Method of Delivery</b> Presence is required. Links to the lecture presentation material will be provided at a later stage.</p> <p><b>Final Examination</b> Written test</p> <p><b>Venue and Date of availability:</b> Karlsruhe, Germany, December 02-06, 2019</p> <p><b>Deadline for registration:</b> October 15th, 2019</p>
<p><b>e-LEARNING COURSE REMINDERS</b></p>	<div data-bbox="847 1397 1118 1518">  </div> <p><b>REMINDERS</b></p>
<p><a href="#">Principles of Radiation Protection. International Framework. Regulatory Control</a> (e-learning)</p>	<div data-bbox="517 1615 660 1727">  </div> <div data-bbox="979 1615 1225 1771">  </div> <p><b>Lecturers:</b> Mrs. Gabriela Rosca-Fartat Mr. Gabriel Stanescu, PhD "Horia Hulubei" National Institute for Physics and Nuclear Engineering (IFIN – HH) Nuclear Training Centre 30 Reactorului, RO-077125, Bucharest-Magurele, Romania</p> <p><b>Method of Delivery:</b> Asynchronous e-learning.</p> <p><b>Final Examination:</b> multiple-choice test In order to apply for this course, please use the application form on the ENEN website: <a href="#">ANETTE application page</a></p>



**SINGLE AND TWO-PHASE THERMAL-HYDRAULICS - for nuclear applications**

(e-learning)



**SINGLE AND TWO-PHASE THERMAL-HYDRAULICS**

The theoretical lectures and exercise material are already posted. Videos fully available.

Contact: [walter.ambrosini@unipi.it](mailto:walter.ambrosini@unipi.it)

**ELINDER COURSE**  
**'Decommissioning**  
**licensing and**  
**environmental impact**  
**assessment'**

**INFORMATION ON INDEPENDENT  
EUROPEAN E&T INITIATIVES**

In the framework of the [European ELINDER project](#), the SCK•CEN Academy for Nuclear Science and Technology organizes a specialisation training course in decommissioning **'Decommissioning licensing and environmental impact assessment'**



21- 25 October, 2019  
SCK•CEN Lakehouse in Mol, Belgium.

**Objective**

Activities related to the decommissioning of nuclear installations significantly differ from those performed during the operational period. The various actors (managers, engineers, technicians, health physicists, regulatory bodies, etc.) are faced with specific issues such as changing environments, numerous “one shot” operations, the production of huge amounts of waste, discrepancies between original design and the final layout of the facility, etc. The regulatory requirements and associated licensing procedure necessitate a good preparation for the dismantling strategy, safety assessment, risk management and environmental impact assessment. With the many questions emerging when a decommissioning project has to be set up, it is of utmost importance that the involvement of the stakeholders addresses the concerns of society.

The main objective of this training course is to provide the participants with the basic requirements regarding the licensing and environmental impact assessment of a decommissioning project and to share experience from ongoing decommissioning projects. Visit the SCK•CEN Academy website for a [detailed programme](#).

**Target audience**

All stakeholders such as regulators, plant managers and operators, health physicists, technical service organisations should take benefit from this event.

**Registration**

Online registration is mandatory for all participants via the [SCK•CEN Academy website](#). The registration deadline is **October 2, 2019**. Prices are available on the [website of the ELINDER training course](#)

**European Nuclear  
Education Network  
Association**



Tel: +32 484 20 15 04  
E-mail: [secretariat@enen.eu](mailto:secretariat@enen.eu)



Web page of ANNETTE Courses

<http://www.enen.eu/en/projects/annette/annette-project-courses1.html>

Web page for course application:

<http://www.enen.eu/en/projects/annette/eoi1.html>



**LINK TO COURSE LIST**

Web page concerning the grants of the ENEN+ project,

<https://plus.enen.eu/grants/>



**LINK TO THE APPLICATION FORM**