



Monthly Bulletin

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In this bulletin

In this issue, we have updated the list of courses, **adding new information on pre-existing and new courses.**

The Course by **FUSENET and Framatome** on **Regulation and its Application in Nuclear Projects** is going to be repeated in September.

The course on **Geological Disposal of Radioactive Wastes** by the **Université de Lorraine and the Universidad Politecnica de Madrid** is being offered this year as well. The **Course on Experimentation in Josef Underground Facility at CTU** will be an interesting complement to it. Another **Hands on Course OpenFOAM CFD simulations** for heat and mass transfer in industrial processes is proposed by the **Technical University of Catalonia (UPC)**

In addition, we also advertise about **independent E&T activities in the nuclear field**, not belonging to the ANNETTE Project.

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.

We had up to now more than 260 applications most of them for multiple courses. However, finalised applications have been less numerous. So, please, keep in touch with ENEN Staff and Course Providers to solve any problem for assuring participation.

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
GEOLOGICAL DISPOSAL
OF RADIOACTIVE WASTE
(17 - 21 June 2019)**

**SYNCHRONOUS
E-LEARNING**



UNIVERSITÉ
DE LORRAINE



POLITÉCNICA

Course Outline and Content

The course will provide several aspects of basic to advanced knowledge on geological disposal of radioactive waste including waste from fuel cycle, geological analogue, radionuclides transport modelling, geo-statistics and inverse problems. The course will contain 30 hours of lectures. The detailed learning outcomes are reported [here](#).

The course is made of the following lectures:

1 – Introduction to radioactive waste disposal

	<p>2 – Waste from Fuel cycle 3 – Geological analogue 4 – Transport modelling 5 – Geo-statistics 6 – Groundwater modelling 7 – Interim storage <u>Requested Background</u> The course is designed for Master level students. The learner is assumed to have basic knowledge of Mathematics and Physics. <u>Teachers</u> Patxi Elorza (UPM), Arturo Hidalgo (UPM), Eduardo Gallego (UPM), Jean Marc Montel (UL), Behrooz Bazargan Sabet (UL) <u>Method of Delivery</u> Synchronous e-learning lectures. On request, lectures can be followed by external students. Date of availability: 17 to 21 June 2019</p>
<p><u>Course on Experimentation in Josef Underground Facility</u></p> <p>A HANDS ON TRAINING in real applications</p> <p>2 - 4 September 2019</p>	<div data-bbox="493 528 726 640">   </div> <p><u>Course Outline and Content</u> 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) <ul style="list-style-type: none"> • 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 <ul style="list-style-type: none"> • In-situ tests on water (gas) permeability of the rock mass • Thermometer assembly and installation • Data transfer and processing <u>Requested Background</u> The learner is assumed to have basic knowledge of soil and rock mechanics. More in course details. <u>Course fee and application</u> <ul style="list-style-type: none"> • no fee to Annette participants • In order to apply for this course, please enroll at the ANNETTE application page • Maximal number of attendess: 8 <u>Method of Delivery:</u> hands-on training in laboratory and underground <u>Trainers:</u> Radek Vasicek (course leader, radek.vasicek@fsv.cvut.cz), Jiri Svoboda, Jiri Stastka (all CTU, the Josef facility) <u>Place of delivery:</u> The Josef Underground Laboratory (map); Smilovice 93, 262 03 Chotilsko; Czech Republic <u>Accommodation and transport:</u> Self organised and self paid by the attendees; for more information and advice please contact our administrative contact <u>Administrative contact:</u> Dana Pacovska - pacovska@fsv.cvut.cz Date of delivery: 2 - 4 September 2019 <u>Organised by:</u> Centre of Experimental Geotechnics, Faculty of Civil Engineering, Czech Technical University in Prague, Thakurova 7, 166 29 Prague 6, Czech Republic</p>
<p><u>MASSIVE OPEN ONLINE COURSE ON NUCLEAR SAFETY CULTURE</u></p> <p>By TECNATOM and UNED (starting date to be announced shortly)</p>	<div data-bbox="493 1814 901 1888">   </div> <p>MOOC (Massive Open Online Course): Introducing safety culture and its application to the nuclear field 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): NOOC I. What is safety culture? NOOC II. Understanding Nuclear Safety Culture</p>

**Regulation and its
Application in Nuclear
Projects**

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

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

NOOC III. Developing leadership for safety
NOOC IV. Refreshing Nuclear Basics

Open now the free registration, by clicking on each NOOC above.

We are actually in the production process. The course is been delayed and the starting date will be announced shortly. The course will be active during three weeks.

If you want to receive information about the MOOC/NOOCs, please fill the form [here](#)
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



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),
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.

REQUESTED BACKGROUND

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.

APPLY HERE

In order to apply for this course, **please enroll at the [ANNETTE application page](#) and then contact:**

Goerge Baltin, Email: goerge.baltin1@framatome.com

CONTACT

For questions and further information, please contact:

Goerge Baltin, Course Manager at Framatome Training Center Germany

Email: goerge.baltin1@framatome.com

**STILL COLLECTING
APPLICATIONS FOR
FPS@KIT SCHOOL**



***COURSES OFFERED BY THE FRAMATOME PROFESSIONAL SCHOOL (FPS)
AT KIT FOR ANNETTE***

- ***[Reactor Exercises](#) (20-25 July 2019)***

	<ul style="list-style-type: none"> ▪ Design of Pipelines against Earthquake Loads (on demand) <p>AN EXTENDED OFFER BY FPS@KIT FOR ANNETTE (TENS OF PLACES)</p> <ul style="list-style-type: none"> ▪ Reactor physics calculations with deterministic methods (link); ▪ Beyond-design accidents, core-melt accidents (link); ▪ Thermohydraulic Stability Analysis (link); ▪ Radiolytic Gas Management in Boiling Water Reactors (link); ▪ Stress Analysis (link); ▪ Light Water Reactor (LWR) core design and fuel management (link); ▪ Light Water Reactor (LWR) core feedback and transient response (link). <p>For a general description of course conditions, look at this link</p>
<p>Hands on OpenFOAM CFD simulations for heat and mass transfer in industrial processes.</p> <p>By Technical University of Catalonia(UPC) Barcelona (Spain)</p> <p>September 16th to 20th, 2019</p>	 <p>UNIVERSITAT POLITÈCNICA DE CATALUNYA BARCELONATECH</p> <p>Course Description</p> <p>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>Topics covered</p> <ol style="list-style-type: none"> 1) Diffusive heat transfer: Introduction to CFD, boundary conditions, the Finite Volume method for diffusion problems 2) Hydrodynamics and turbulence: The conservative laws of fluid motion, the Finite Volume method for advection diffusion problems, algorithms for pressure velocity coupling 3) Thermal hydraulics diffusive convective heat transfer: CFD strategies for temperature velocity coupling, finite Volume method for unsteady flows <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>Link to the full description of course conditions (https://ant.upc.edu/en/activities)</p>
e-LEARNING COURSE REMINDERS	 <p>REMINERS</p>
Principles of Radiation Protection. International Framework. Regulatory Control (e-learning)	  <p>Lecturers: 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>Method of Delivery: Asynchronous e-learning.</p> <p>Final Examination: multiple-choice test</p> <p>In order to apply for this course, please use the application form on the ENEN website: ANNETTE application page</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

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

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

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**



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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