

Blended learning in radiation protection and radioecology

Programme: ERASMUS+

Action: Key Action 2 (Strategic Partnership)

12th Cherne workshop in Covilha; 22 May 2017

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Overview



- General reminder of the aims of the project
- Implementation of the project: what is already done, what is still to do!
 - Academic workpackage
 - Administrative workpackage
- **Quality**
- **Dissemination & sustainability**



Strategic Partnerships in a few words

Strategic Partnerships aim to:

- **develop initiatives addressing one or more fields of education training**
- **promote innovation, exchange of experience and know-how between different types of organisations involved in education, training and youth or in other relevant fields.**



EU priorities that we are targeting

- ▶ Improving the **quality and relevance** of higher education
 - ▶ By identifying, in the partner countries, the market needs for a specific knowledge and training related to nuclear applications
- ▶ Contributing to the development of a **European Area of Skills and Qualifications**
 - ▶ Through the blended learning program that we will develop
- ▶ Contributing to the **standardization of the knowledge across Europe** in radiation protection and safe use of radioactive materials
 - ▶ By sharing the knowledge in radiation protection and radioecology



Project Vision

- ▶ *What are we trying to achieve?*

- ▶ PHASE 1 : **To increase student's employability** by offering a program which respond to the market needs:

- ▶ E-learning platform

- ▶ Real mobilities

- ▶ Internships

- ▶ Certification (Europass Certificate Supplement and ECTS for students): model presented

In finalization phase

- ▶ PHASE 2 : **To increase the qualifications of the people already involved in the work market** by:

- ▶ Extending the e-learning modules to this specific audience

Will be left for the sustainability phase



Achievement indicators

How will you know when the project is complete?

- ▶ The assessment of the effectiveness of the program will be based on **3 achievement indicators:**
 - ▶ the number of participants along with the gross average mark
 - ▶ **136 students in total for the training modules; more than expected**
 - ▶ the level of proficiency gained by the participant students/trainees in the studied subject
 - ▶ the increased marketability of their skills
 - ▶ **How can we achieve the two other indicators**
 - ▶ **Hard to evaluate in two years, depend of a lot of elements**
 - ▶ **For some students, real improvement in English language skills**
 - ▶ **Importance of developing a European network of future worker**



Duration

- ▶ Project Start Date: 01-09-2015
- ▶ Project End Date: 31-08-2017
 - ▶ Total Duration: 24 months



Partnership:

- Academic Partners (from the CHERNE network) representing **7 countries**:
 - HE2B-ISIB – **BELGIUM**
 - UNIVERSITEIT HASSELT (UHasselt)- **BELGIUM**
 - FACHHOCHSCHULE AACHEN (FH Aachen) - **GERMANY**
 - UNIVERSITA DI BOLOGNA (UNIBO) - **ITALY**
 - UNIVERSIDADE DE COIMBRA - **PORTUGAL**
 - CZECH TECHNICAL UNIVERSITY IN PRAGUE (CUT) – **CZECH REPUBLIC**
 - NATIONAL TECHNICAL UNIVERSITY OF ATHENS (NTUA) - **GREECE**
 - UNIVERSITAT POLITECNICA DE VALENCIA (UPV)- **SPAIN**
- Non- academic partners to add value to the partnership:
 - a research institute: THE NATIONAL RADIATION PROTECTION INSTITUTE (SURO) – **CZECH REPUBLIC**
 - a regulatory body: GREEK ATOMIC ENERGY COMMISSION - **GREECE**



Objectives



- ▶ **Development of a blended learning program** in radiation protection and radioecology
- ▶ **Continuous education program** for people already *involved* in radiation protection ,
- ▶ **Acquisition of specific competences** in the nuclear field for those who were *not involved* in nuclear and radiological techniques during their studies
 - ▶ **Sustainability**
- ▶ **Contribution towards standardization of the knowledge across Europe** in radiation protection and safe use of radioactive materials
- ▶ **By:**
 - ▶ E-learning
 - ▶ training



How will it work

- ▶ For the students:
 - ▶ E-learning modules can be used as a preparation for advanced course modules, for selection of the students in the case of practical sessions (pre-requisite) and finally for the follow-up of the global program
 - ▶ Real mobility to access large experimental devices not present in each country and to be given the opportunity to do an internship in other EU countries.
- ▶ For the workers:
 - ▶ E-learning mobility to acquire new competences and for continuous education purposes
 - ▶ **Not done for the moment, for future?**




Intellectual outputs: deliverable proposed

- ▶ O1: Analyze of the present situation in radiation protection and radioecology within the European countries
- ▶ **O2: Implementation of course modules on an e-learning platform**
- ▶ O3: Trainings in Radiation Protection and Radioecology



O1: analyze of the present situation in radiation protection and radioecology within the European countries

- ▶ Leader: UHasselt
- ▶ Participants: all
- ▶ Aim:
 - ▶ Evaluation of the present situation
 - ▶ Evaluation of the need of the labor market in terms of skills and competences
- ▶ Deliverable:
 - ▶ **Report published on the project website**
- ▶ **Project presented last year at the workshop**



O2: Implementation of course modules on an e-learning platform

- ▶ **Leader: EEAE (Greek Energy atomic Commission) (organizing the platform)**
- ▶ **Coordinator of content: NTUA**
- ▶ **Leader of each module have to coordinate the content with NTUA**
- ▶ Participant: all (feeding all the modules)
- ▶ Aim:
 - ▶ Accessibility for workers
 - ▶ Pre-requisite for training modules
- ▶ Deliverable:
 - ▶ 6 e-learning modules of 2 ECTS each
- ▶ **Need to define how to organise the follow up after the end of the grant period: access to the students and people from the work market (continuous education)**

E-learning platform: use

- ▶ During the SP, these e-learning modules :
 - ▶ Were used for the preparation of the training modules
 - ▶ **specifics modules were created on the platform for the Training modules**
 - ▶ It was not needed to use them for the selection of the students in the case of practical sessions:
- ▶ After the two years of grants , these modules (Sustainability)
 - ▶ can also be followed individually as continuous education for workers who need to develop specific skills, perhaps with some fee.
 - ▶ Can be used by the partner of the SP but also open to the members of the Cherne network without any restriction as part of their regular cursus
 - ▶ Can be used for the preparation of the future training modules (see after)
- ▶ **Still to do**
 - ▶ **Define the way to evaluate the knowledge acquire in order to deliver the ECTS related to each module: on line exam? Homework?**

E-learning modules

Title	Basics nuclear and radiation physics	Basics of measurement and dosimetry	Radiation protection	General safety and security principles	Basics radiochemistry	Medical applications
Participants	SURO, Coimbra	NTUA, CTU	UPV, EEAE	ISIB, UHasselt	FHAachen, UHasselt	Athens, (Unibo, FH Aachen) EEAE
Leader	CTU	FHAachen	SURO	UPV	ISIB	Coimbra

- **Achievement:**
 - **Module 1: complete**
 - **Module 2, 5: nearly complete**
 - **Module 3, 4, 6: need to be done, have to be complete beginning of August**
- **In general, mostly ppt or file**
- **Better to encourage the evolution to more interactive system**



O3: Trainings in Radiation Protection and Radioecology

- ▶ EXPLANATION :

- ▶ Mobility trainings will consist in **5 days of experimental work on real devices.**
- ▶ The training modules will involve **student mobility** and **staff mobility (from academic and non-academic partners).**
- ▶ The 6 modules were developed
 - ▶ In some case, students were oriented to e-learning module for theoretical aspects
 - ▶ For others, specific modules were created on the platform
- ▶ **Large** participation of students
 - ▶ **16 to 22 students per training module**
 - ▶ **136 students in total**



O3: Trainings in Radiation Protection and Radioecology

- All partner involved
- Aim:
 - Real mobility
 - Uses of large specific devices
- Deliverable:
 - 6 training modules of 2 ECTS each (**recognised in some institutions**)
 - Europass for students :**we have to achieve the content of this document**
 - **AEF really enthusiastic of the use of this document**
- a coordinator for each training activity have been defined (see table):

O3: Training modules

Title	TRA.	MERIBel	SARA	MARC	MaRaWas	MANTRA
prof	ISIB, Uhasselt, Unibo	UPV	ISIB, Uhasselt SURO	Uhasselt Unibo	ISIB CTU FHAachen, NTUA Unibo	CTU UHasselt ISIB FHAachen
Students (136 total)	ISIB, NTUA, Uhasselt, UPV, FHAachen, Unibo, CTU	ISIB, NTUA, Uhasselt, UPV, CTU FHAachen, Unibo,Coimbr	ISIB, NTUA, Uhasselt, UPV, FHAachen, Unibo, CTU	Uhasselt, UPV, FHAachen, Unibo, CTU	ISIB, NTUA, Uhasselt, UPV, FHAachen, Unibo, CTU	ISIB, NTUA, Uhasselt, UPV, CTUFHAachen Unibo,Coimbr
Leader	UPV (02/2017)	ISIB/UHasselt (04/2017)	CTU (12/2016)	FHAachen/ ISIB (09/2016)	Uhasselt (11/2016)	Unibo (03/2017)

- **Module created on the e-learning platform, content:**
 - Specific dedicated lecture
 - Experiment procedure, schedule,
- **Reports and presentations of students will be put on a web site so they can be check by the AEF**

Global project quality: Measures

- WPL : UNIBO
- *How will you know when the project is complete?:* **At the beginning of the project, 3 indicators were defined**
 1. **The number of participants along with the gross average mark :**
 - All the training modules meet a real success: 136 student in total for the 6 module
 - E-learning modules are not completely finished; difficult to evaluate now
 2. **the level of proficiency gained by the participant students/trainees in the studied subject**
 - Will be evaluated by means of questionnaires for each training module
 3. **the increased marketability of their skills.**
 - Really difficult to assess after 2 years
 - A proposition can be to send a questionnaire to the students after their first year of work to evaluate the interest of the different modules
 - A survey can also be organised in some companies
- **UNIBO will send the final version of the QA**

Dissemination: Resources and actions

- ▶ The Cherne platform: announcement of course
- ▶ The Cherne bulletin: announcement of course , short summary of what was done...
 - ▶ Largely distributed among partner or also other institutions
- ▶ The partner websites, intranet and newsletters: promotion among the students of each institution+ presentation to new students during Open-Doors Days (in some case)
- ▶ Presentation during workshops
 - ▶ In this Cherne workshop in Covilha : presentation of some training modules
 - ▶ ETRAP2017 (in June, Valencia- Spain)
- ▶ **Other ideas?**
 - ▶ **By social media (Facebook...): it was done by students for some training modules but it can be more organised**

Sustainability:

- ▶ **After the end of the project, the e-learning modules and the training documentation (lecture and exercises) will remain accessible to:**
 - ▶ the partners institutions and the member of the Cherne network
 - ▶ their students
 - ▶ non academic people for continuous educational purposes.
- ▶ The modules used during the training modules will be in most cases **integrated into the existing curricula** of each institution
- ▶ Some training modules are already foreseen for the academic year 2017-2018 (MaRaWas, MARC, SARA)
- ▶ **Problem: money** need for the travel and the stay of students
 - ▶ Possibility of participation highly depend on the home institution of the students; some internal funding is possible in some institutions
 - ▶ No possibility of short term mobility for student by the ERASMUS system whereas system exist for teaching staff