

### Work package 3 description

<b>Work package number</b>	3	<b>Start date or starting event</b>					Month 1
<b>Work package title</b>	Development and Implementation of Master Courses						
<b>Activity Type</b>	COORD						
<b>Participant id</b>	11	15	2,4,6,7,8,9, 12,13, 14	1	3	TOTAL	
<b>Participant short name</b>	ENEN	ITN	CU, Micans, POSIVA, ANDRA, ARAO, RAWRA, ENRESA, GRS, NDA	INPL	TUC		
<b>Person-months per participant:</b>	10.5	1.5	0.5	4.5	4	25	

#### Objectives

Work package 3 led by UPM under the umbrella of ENEN association is dedicated to the implementation of the PETRUS Master programme. The structure of the PETRUS curriculum is presented in figure 3. It consists of three parts:

- A selection of a set of standard courses from different disciplines of geosciences having direct link with the geological disposal issues.
- A set of Common Courses that will be shared by all the partners through live broadcast and using “face to face remote teaching” methodology.
- A frame for proposing Master thesis subjects in geological disposal to the students who have follow the PETRUS programme.

The contents of the Common Courses have been defined by PETRUS group during the ENEN II project. A syllabus has been prepared and different lectures that must entry into the educational programme have been identified. Besides, technical tools which allow the live transmission of the lectures via internet have been successfully tested. The continuation of these works in the present project deals with the implementation of the PETRUS common courses into the standard Master Programmes. Implementation is made in two phases. The first phase includes “Pilot Tests” which are a good way to experiment within a controlled environment, with a view for a more comprehensive implementation to follow. Among the academic participants, four universities will experiment the common courses by including PETRUS into their existing standard Master Programme as an elective module. These universities are: INPL and UPM, TUC and CTU acting under the ENEN umbrella. In the second phase the improved programme will be implemented in the partner universities as an integrated module of their Master programme. PETRUS2 deals only with the first part of the implementation, which includes also the accreditation and the mutual recognition of the courses. The second objective of the WP3 is to take advantage from the development of these courses by adapting and using them as pedagogic materials for training purposes.

#### Description of work

##### *T3.1 Development of the PETRUS courses*

The work in this task consists in assembling different lectures identified in the syllabus of the PETRUS programme. This includes general lectures, advanced lectures and technical lectures focused on practical and operational aspects. Some of these lectures are already exist in different universities; on the other hand several industrial partners like ANDRA propose appropriate technical courses for this programme. Therefore a limited number of lectures have to be identified for development by 4 of the academic participants to this work package.

It must be noted that the development of these lecture will not be supported by the PETRUS2 project.

The assembled pedagogic materials must be readapted to the teaching mode. Indeed teaching practice with multi-media facilities differs from classroom setting methods. The amount and quality of interaction between the students and lectures passes through the adaptation of the programme resources (texts, images and talks),

which must favour a collaborative learning environment.

**T3.2: Accreditation**

The relevant set of objective criteria identified in WP4, will be applied for the evaluation and accreditation of the PETRUS Common courses. Although the general framework will be the Bologna process, the application of the practical rules is somewhat different in different countries as are the procedures for the quality assessment of the educational programmes. Therefore, an agreement for the mutually recognition of the PETRUS module is necessary between the participants. Another objective in this task is the labelling of the PETRUS courses at the European level. The delivery of a special “certificate” to students who follow PETRUS programme is targeted. In this frame WP3 will collaborate with the ENEN association for finding a harmonised frame that satisfies both ENEN and PETRUS requirements.

**T3.3: Pilot sessions**

At least two pilot sessions will be organised corresponding to two academic years. The pilot action will be materialised through the organisation of periodic teaching seminars. Each seminar will be organised in one of the four universities participating to the pilot experience and will be transmitted live via Internet facilities to the three other universities. The procedures defined in WP4 will be applied during and after the courses for the academic knowledge evaluation but also for collecting feedback from learners. For each session, these data will be analysed and reported in order to improve the next session. Evaluating the flow and balance of the lectures and checking students’ engagement with the e-teaching materials are particular points that must be highlighted in the context of the remote teaching method. The number of students that will follow these courses is estimated at about 8 to 10 by classroom. Thus in total about 30 students are expected for each pilot session. The works carried out during the ENEN II project have fixed the content of a full session to 10 ECTS, which includes 100 hours of lectures.

**T3.4: Adaptation of PETRUS Common courses to training**

The aim of this task is to study how much the existing lectures that will entry to the PETRUS programme must be modified to allow the attendance of external auditors. This is a double challenges consisting in to make the courses as modular as possible but without breaking the coherence of the whole programme for the academic students or diminishing the quality of the courses. The structure adopted for the delivery of the common courses is by essence modular since it is constituted of several seminars. However this modularity is seen from academic point of view and could be not suitable for training purpose. For achieving this task, voluntary external participants will follow the courses during at least one seminar. The analysis of their feedbacks allows drawing perspective for further development.

**Deliverables:**

D3.1: Development of PETRUS Common Courses	month 12 (WP leader + all participants)
D3.2: Accreditation procedure - Progress Report	month 12 (WP leader + INPL- CTU- TUC)
D3.3: Running the first pilot session	month 14 (WP leader + INPL - CTU- TUC)
D3.4: First pilot evaluation and improvement report	month 20 (WP leader + INPL - CTU- TUC- WP4)
D3.5: Accreditation procedure - Progress Report	month 24 (WP leader + INPL - CTU- TUC)
D3.6: Running the second pilot session	month 26 (WP leader + INPL - CTU- TUC)
D3.7: Final report on pilot action	month 35 (WP leader)

**Milestones and expected result**

M3.1: Agreement in the course selection	month 6
M3.2: Agreement for labelling PETRUS programme	month 24
M3.3: Accreditation of Common Master courses	month 30