

Environmental Portfolio for Quality in University Education

2014-1-EL01-KA200-001373

Intellectual Output (O5)









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Instructional planning

According to ECTS handbook, a year of study contains 1.500 – 1.800 hours of study, 1 ECTS corresponds to 25-30 hours of study and an MSc course awards 60-120 ECTS. The proposed EPOQUE courses award 15 ECTS each (thus the portfolio awards 60 ECTS in total) and each course requires 450 hours of study. Thus the entire EPOQUE portfolio is marginally equivalent to an MSc course.

Online courses are structured based on the allocation of study effort on a weekly basis. There are no cognitive dependencies among the four courses, that is, <u>students can take any course at any time and any order</u>. This means that one could complete the entire portfolio in one year if one chooses to attend all four courses in parallel. Because literature suggests to allocate 10 hours of study per week per course, this would create a maximum study effort of 40 hour per week, which is acceptable; students with less available time could choose a more relaxed approach.

Each course expands over 45 weeks of study (that is, almost one calendar year). Based on the above, 1 ECTS corresponds to 3 weeks of study for the online course and 1 module should expand over 9 weeks of study, with the exception of the case study, which expands over 18 weeks of study. Contents are structured on a weekly basis. Study effort has been divided into 10 hour chunks. Assessments are included.

One indicative structure per a 90 hours of study (=9 weeks) module is:

- 30 hours (=3 weeks) of study, further broken down as follows:
 - 1-3 hours of lecture per week (a total of 3-9 hours of lecture) using powerpoint presentations
 - 7-9 hours of study per week (a total of 21-27 hours of study), during which, the students study resources (i.e. papers, web sites, reports, videos, etc)
 - If possible, one can include collaborative activities, face to face meetings or teleconferences (i.e.
 2 hours per week)
- 30-40 hours of intermediate assessment projects, which include online tests, MCQ, etc, as well as project work
- 20-30 hours of final assessment project

The EPOQUE portfolio consists of four courses; a course consists of four modules and one module consists of topics (learning modules or chunks). The smallest learning chunk lasts one week and requires a 10 hour study effort. Our basis of instruction is Learning Outcomes (LOut); students have to achieve a set of well-defined LOut per topic. LOut describe knowledge, skills and competences that students acquire after following a structured learning procedure (definition by Cedefop).







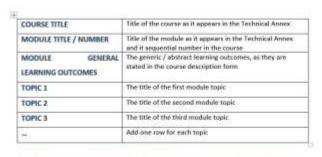


Educational material is structured in Learning Objects (LObj). An LObj usually leads to the achievement of at least one LOut. Examples of LObj are text documents, presentations, videos, lectures, assignments etc.

The educational material that has been produced for face to face teaching and most of the material that can be found on the web are not suitable for online adult education; thus, adaptation is necessary. For the material produced by the partners, special guides were developed by HOU. For the material that was produced by third parties, the content of which cannot be edited directly, partners produced "cover pages" containing a summary of the contents of the material and the ways it can contribute to learning the specific topic.

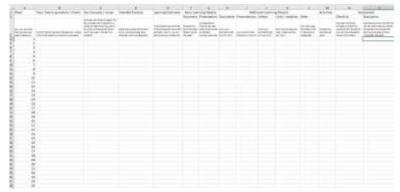
In order to adapt the educational material for the needs of the e-learning process we followed a structured procedure using the following forms:

• The Course Instructional Plan (CIP) to be filled for each course that provides general information about each course (i.e. course name, modules, topics and learning outcomes for each module)



Note that the EPOQUE portfolio consists of four courses; a course consists of four modules, a module consists of tupics (learning modules or chunks). You are advised to break down the contents of a module in smaller chunks, in under to facilitate unlies (learning. The smallest chunk would last one week and require a 10 hour attudy effort; of course you can have larger chunks (multiples of 10 hours), but it is advised to acold smaller chunks, as this may impose difficulty in planning and learning.

 A Weekly Study Programme (WSP) to be filled for each course to facilitate the instructional planning, which is an excel file providing a holistic view of the educational program of each course on a weekly basis (topic to be taught, associated educational material and activities, etc.)











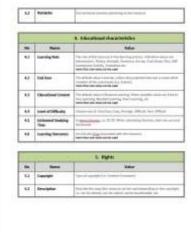
• The Online Topic (OT) containing information about each topic within modules (e.g. duration in weeks, key concepts, learning outcomes, learning material, means of evaluation, etc.)



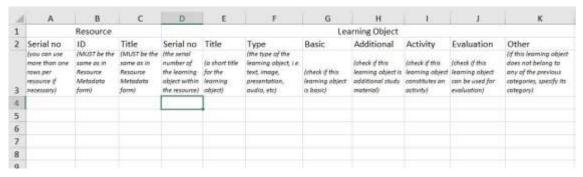


The Resource Metadata (RM) describing the metadata for each learning material





• The Course Resource Index (CRI) that is a list of the resources used as learning material in the context of each course



The planning process was as follows:









- <u>Prepare the instructional plan for each course, using the CIP form</u>. Do this upfront, so as to facilitate the realization of the online course and forms at a later time. However, we understand the need to be flexible, therefore, adaptations of the plan as the project goes on are expected.
- Prepare the weekly study programme for each course, using the WSP form, based on the instructional plan (the study course **realizes** the plan). The same clause regarding flexibility holds here as well, but in addition, you have to respect the 10 study hours per week and the ECTS allocation per module.
- <u>Prepare descriptions of learning modules (topics) for each course module, using the OT form</u>. Make sure that you update the WSP form accordingly, so that topic duration and contents are mapped in the study programme correctly.
- For each educational **resource** you want to use, <u>fill in the associated RM form</u>. This form will be used to index the resources you suggest to put online. Note that usually a resource is NOT a LObj; a resource is a file or a web site that can contain many LObj, although in some cases (i.e. case study, tests, etc) there may be a 1-1 correspondence between resource and object. The form uses a scheme based on IEEE LOM standard and will be used to index and retrieve resources
- For each course, <u>fill in the associated CRI form</u>. In it, you have to record ALL the educational resources that are used in a course (see above), together with the LObj each of them contains (if any). The purpose is to use it as an index to the LObj that we must put online, per course. Note that a resource may or may not contain LObj (in the former case, the resource itself is a LObj). The principle of flexibility applies here as well; we expect to receive a new version of this form every time a topic is added to the study programme.

Course index

Course I: Participatory methods in sustainable management of natural resources

There has been a growing interest in the use of participatory approaches in sustainable management of natural resource. Action research activities are widely seen as a pool of concepts and practices that enable citizens to enhance their knowledge for sustainable development. We propose to use as teaching material case studies in which participatory approaches have been successful or have encountered obstacles of different nature such as authorities or communities. The methods of the social sciences and qualitative research are discussed in the course starting from a critical analysis of these cases studies. Aim of the course is to develop transversal competencies in science, in economic and social sciences for an education that involves people as citizens. Learners learn to recognize the complexity of many phenomena with a critical integrating knowledge coming from different disciplines. Learning activities will be focused on dealing with real problems and critically evaluating the consequences of different solutions. The teacher/lecturer will assume different roles in the same activity: expert, because he studied a problem before; stimulator, capable of bringing out different points of view; researcher, able to systematize and produce analysis documenting the processes of learning and teaching. The course will rely upon case studies on problematic situations of interest in environmental education and sustainable development. The course address students from different degree courses, school teachers and educators who work in local institutions and will be held in different locations: universities, schools and









museums to meet the general public. The assessment is formative, trying to develop, in it, the ability to analyze and document the phenomena of environmental interest.

<u>Course II: Current state and future of the Baltic and Mediterranean Area in an interdisciplinary perspective</u>

This course explores the present and future state of the Baltic and the Mediterranean area through interdisciplinary approaches. Specifically, concerning The Baltic Sea Region, it should be mentioned that it occupies several countries and all of them forms a Council of the Baltic Sea Nations. On the other hand, the Mediterranean Sea covers portions of three continents: Africa, Asia and Europe. Furthermore, this area includes the Mediterranean climate, which is responsible for its rich flora in the entire region. Finally, both of these areas face a number of problems environmentally related, so on the occasion of this course, we will try to name these problems, study them and of course to give some solutions.

<u>Course III: Entrepreneurship – Intelligent Energy</u>

Entrepreneurship is the capacity and willingness to develop, organise and manage a business venture along with any of its risks in order to make a profit. The most obvious example of entrepreneurship is the starting of new businesses. In economics, entrepreneurship combined with land, labour, natural resources and capital can produce profit. Entrepreneurial spirit is characterised by innovation and risk-taking, and is an essential part of a nation's ability to succeed in an ever changing and increasingly competitive global marketplace.

As energy sector is changing and focusing more on renewable energy sources, while increasingly integrating digital technologies throughout all stages of the energy value chain, a new branch of entrepreneurship has emerged that is called green entrepreneurship. Green businesses are businesses that are committed to reduce their impact on the environment or, on a larger scale focus on sustainability. Towards this direction, during the last decade, the concepts of "Intelligent Energy" and "Smart Grid" are widely implemented, in order to provide an advanced infrastructure that will facilitate a more sustainable and effective use of energy, the active consumer participation and an increased integration of renewable energy sources. Green entrepreneurship has already found its pace and currently expands in various application domains, such as smart cities and transport. Motivation, scope and impact of green approaches vary along these domains, where several ICTs are combined to achieve efficient and sustainable use of energy.

This course describes the basic principles of entrepreneurship, as well as the concept of Intelligent Energy. It then provides an overview of green entrepreneurship along with various application sectors and presents a relative business plan to provide learners with a case study of how green entrepreneurship is actually realized.

Course IV: Applied energy management systems in/for organizations (including schools)

In view of the world's growing dependence on energy availability, the need for energy management is now felt more than ever. It is essential to save on energy use in order to :

- reduce the damage that we're doing to our planet
- reduce our dependency on fossil fuels that are limited in supply

Energy management is the key to saving energy. Much of the importance of energy saving stems from the global need to save energy - this global need affects energy prices, emissions targets, and legislation, all of which lead to several reasons why an organisation should do its utmost to reduce its energy consumption.

Reducing on energy consumption also has other benefits directly related to the organisation itself. These are:









- cost and energy reduction
- decreased carbon emissions and the environmental damage that they cause while promoting a green, sustainable image of the organisation
- risk reduction due to the possibility of increased energy prices or energy supply shortages that could seriously affect an organisation's profitability and survival

Energy management systems (EnMS) are key to controlling energy consumption and to reach energy efficiency targets. By the end of this course the learner will be able to promote and implement EnMS systems within any organisational setup. Considering the shift towards more energy efficient modes of operation within industry, public buildings, offices, etc. this course aims to enable the learner to enter the workforce with the required skills for EnMS management.

Course delivery

The EPOQUE's e-learning platform focuses on supporting the e-learning process acting as intermediate between teachers and students. After logging into the EPOQUE platform, users can navigate to the four EPOQUE online courses, access the platform's tools (e.g. forums) and various links (e.g. the EPOQUE website), as well as see contact and social media information. The EPOQUE platform's structure hosts the following:

- A Generic Course hosting:
 - News forum, Generic question forum, Q & A forum
 - Collaboration wiki
- The four EPOQUE online courses, each including:
 - General Forum
 - News forum
 - File repository
 - Chat Room
 - Course material reflecting 45 weeks (documents, presentations, videos, use cases, external urls, etc.)

Each course is structured in a week-based format and weekly content is available through appropriate content blocks. Users are able to quickly navigate to the 45 weeks of each course by a navigation menu on the left of the course's content, which is also used to quickly access the aforementioned components of each course. Moreover, through the same menu, users may access their profiles, where they can set their preferences, modify their personal information, access forum discussions they participate, view their blog entries and go through their private messages. It is noted that users are able to access learning material through embedded browsers, pdf readers, etc., though which they also have the ability to download learning material.





