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Capacity-Building in the Field of Higher Education

**Project acronym:** ECOIMPACT

**Project full title:** Adaptive learning environment for competence in economic and societal impacts of local weather, air quality and climate

**Grant agreement:** 561975-EPP-1-2015-1-FI-EPPKA2-CBHE-JP (2015-3320)

## **WORKSHOP 1**

### **DEVELOPMENT OF EDUCATIONAL MATERIALS: STRUCTURE**

#### **AGENDA**

**DRAFT – 24.5.2016**

**29 May – 3 June 2016**

#### **Venue:**

Hyytiälä Forestry Field Station, Finland

<http://www.helsinki.fi/hyytiala/>

#### **Working languages:**

Russian and English

## About the Workshop

This workshop finalises the project Task 2.1 - *To develop an internal system of categories - a system of meta-information tags for organising educational materials in structured knowledge bases*, and links it to Task 2.2 - *To develop short-term “sectoral” courses for customers in weather-sensitive sectors – agriculture, transport, energy, healthcare (biometeorology), and city management*.

The Workshop gets together the courses’ developers.

Its four full working days comprise the following activities:

- Acquainting with Station for Measuring Ecosystem-Atmosphere Relations ([SMEAR II](#)) – organisation (architecture), measurements, scientific results (1.5 hours)
- **Lectures** on key general aspects of creating the content for personal learning environment (PLE) and on accounting for weather in economic activities (total of 6 lectures, or 7.25 hours)
- **Master-class** including a demonstration of example Arduino-based laboratory works and brainstorming on labs for the developed courses (2.5 hours)
- **Coaching sessions**: proceeding from the project plan, and based on the lectures and master-class, Dr Alexey Umnov (University of Nizhny Novgorod) assisted by Dr Anna Fokicheva (Roshydromet Advanced Training Institute) give concrete tasks to the Workshop participants; the completed tasks lead to the anticipated Workshop results (see Annex, total of 10 hours)
- Self-organised discussions and joint work (minimum 3.5 hours)
- Finalising and approving the resulting documents (see Annex): by the end of Day 3, drafts of the documents are ready; the Workshop coaches analyse the drafts and at the opening of Day 4 present their recommendations to developers, who take them into account (7-9 hours)

## 29 May, Sunday - Arrival

Morning-afternoon	Arrival of the Workshop participants to Helsinki
17:00	Departure from Helsinki to Hyytiälä by bus Pick-up point: <b>Railway Square (Rautatienatori)</b> - tbc
20:30	Arrival to Hyytiälä Evening snacks

## 30 May, Monday – Day 1

7:00 – 8:00	<b>Breakfast</b>
8:00 – 8:15	<b>Opening of the Workshop</b> <i>Svyatoslav Tyuryakov, University of Helsinki</i>
<i>Lectures 1 - 3 by Alexey Umnov, University of Nizhny Novgorod</i>	
8:15 – 9:00	<b>L1: Modern approaches to structuring of information arrays for users</b>
9:00 – 10:00	<b>L2: The concept of <a href="#">programmed learning</a> and its relation to the concept of <a href="#">microlearning</a></b>
10:00 – 11:00	<b>L3: Organisation of educational material in ECOIMPACT personal learning environment - a macroscale perspective</b>
11:00 – 12:00	<b>Lunch</b>
12:00 – 13:30	<b>Tour around SMEAR II station</b>
13:30 – 14:00	<b>Afternoon coffee</b>
<i>Lectures 4 - 5 by Anna Fokicheva, Roshydromet Advanced Training Institute</i>	
14:00 – 15:15	<b>L4: Introduction to economic meteorology</b>
15:15 – 16:30	<b>L5: Weather sensitivity of the production cycles (on examples of selected economic sectors)</b>
16:30 – 17:30	<b>Dinner</b>
18:00 – 18:30	<b>Organisation of further work: Coaching sessions towards the anticipated Workshop results</b> <i>Alexey Umnov</i>
18:30 – 20:00	<b>Open discussions, joint work (self-organised)</b>
20:00 – 21:00	<b>Evening snacks</b>

## 31 May, Tuesday – Day 2

7:00 – 8:00	<b>Breakfast</b>
8:00 – 9:00	<b>L6: Types of mashup content within specific educational courses</b> <i>Alexey Umnov</i>
9:00 – 11:00	<b>Coaching session</b> <i>Alexey Umnov, Anna Fokicheva</i>
11:00 – 12:00	<b>Lunch</b>
12:00 – 13:30	<b>Coaching session</b> <i>Alexey Umnov, Anna Fokicheva</i>
13:30 – 14:00	<b>Afternoon coffee</b>
Master-class by <i>Alexey Umnov and Alexey Kiryushin, University of Nizhny Novgorod</i>	
14:00 – 14:40	Part 1: Demonstration of possible options for Arduino-based laboratory works
14:40 – 15:10	Part 2: Brainstorming to determine appropriate labs for each consortium member in Russia and Ukraine
15:10 – 16:30	Part 3: Presentations of labs' ideas and plans followed by the exchange of views
16:30 – 17:30	<b>Dinner</b>
18:00 – 20:00	<b>Open discussions, joint work</b> (self-organised)
19:00 – 22:00	<b>Sauna and BBQ</b> (grill house between the lakeshore saunas) - tbc

## 1 June, Wednesday – Day 3

7:00 – 8:00	<b>Breakfast</b>
8:00 – 11:00	<b>Coaching session</b> <i>Alexey Umnov, Anna Fokicheva</i>
11:00 – 12:00	<b>Lunch</b>
12:00 – 13:30	<b>Coaching session</b> <i>Alexey Umnov, Anna Fokicheva</i>
13:30 – 14:00	<b>Afternoon coffee</b>
14:00 – 16:00	<b>Coaching session</b> <i>Alexey Umnov, Anna Fokicheva</i>

16:00 – 16:30	<b>Delivery of draft documents comprising the Workshop results (see Annex) to the Workshop coaches, Alexey Umnov and Anna Fokicheva</b> <i>All developers</i>
16:30 – 17:30	<b>Dinner</b>
18:00 – 20:00	Free time
20:00 – 21:00	<b>Evening snacks</b>

## 2 June, Thursday – Day 4

7:00 – 8:00	<b>Breakfast</b>
8:00 – 9:00	<b>Recommendations to developers</b> <i>Alexey Umnov, Anna Fokicheva</i>
9:00 – 11:00	<b>Finalising the documents</b> <i>All developers</i>
11:00 – 12:00	<b>Lunch</b>
12:00 – 13:30	<b>Finalising the documents</b> <i>All developers</i>
13:30 – 14:00	<b>Afternoon coffee</b>
14:00 – 16:30	<b>Approving the documents</b> <i>Coaches and all developers</i>
16:30 – 17:30	<b>Dinner</b>
18:00 – 20:00	<b>Approving the documents</b> (continued if needed) <b>Closing of the Workshop</b>
20:00 –	<b>BBQ</b> (scenic campfire place Makkarakallio?) - tbc

## 3 June, Friday – Departure

7:00 – 8:00	<b>Breakfast</b>
8:00	Departure from Hyytiälä to Helsinki by bus
11:30 (approx.)	Drop-off at Vantaa airport (by request)
12:00 -13:00 (optional)	<b>Lunch</b> at Finnish Meteorological Institute (at own expense)
13:00 – 14:00 (optional)	Tour around the Finnish Meteorological Institute (in case of sufficient interest)
Afternoon-evening	Departure of participants

## Results anticipated by the end of the Workshop 1

### 1. A formal document "Structure of the ECOIMPACT educational materials" containing:

- Preamble (general for the entire document)
- A description of each individual course - All courses must be similar in size and level of detail (number of sections and subsections). All courses (or elements thereof) must have counterparts at high-ranked universities, either in the form of the classic courses or as MOOCs
  - Aims and objectives of a course
  - Basic (entry) competences and skills required for completing the course
  - List of questions for testing the basic competences
  - The course sections and subsections
  - Description of lab works for the course (by section)
  - List of literature for the course (by section)
  - List of scientific fields related to the course, with indication of the top high impact journals in those fields (including the journals' website links)
  - List of industries and businesses interested in specialists with the knowledge provided by the developed course
  - List of Internet sources on the course-related topics (by section)
  - List of high-ranked universities, providing similar courses (full courses or parts)
  - List of sections from other courses developed in ECOIMPACT project, which can be useful for learners while completing the course
- Description of sources of additional reference and educational information

### 2. List of keywords (vocabulary) binding all the developed educational materials to top-level categories (for positioning of the courses in relation to fields of knowledge)

### 3. Working documentation on the course content, containing for each course:

- Linked (linear) list of the course sections (categories)
- The following meta information assigned to each (sub)section:
  - Keywords describing a (sub)section, both in correct spelling, and in a possible erroneous spelling - for effective use by search engines

- Abstract, allowing a learner rapidly assess the material
- Geographical tag, if necessary
- Time stamp (or time interval), if necessary
- Formal list of competencies (both basic and obtained during the course)
- Keywords from the approved vocabulary (Item 2), binding a section (category) to top-level categories
- Mind-map of the course (graphical representation of the course structure)
- Thesaurus of the course
- For each category (section) of the course - a list of documents (lectures, meta-documents)
- For each category - a meta-document (if necessary, several meta-documents), serving as a guide to the category (section)
- The following meta-information assigned to each document (such as a lecture, or a meta-document):
  - Keywords characterizing the document (in both correct spelling, and in possibly erroneous spelling - for effective use by search engines)
  - Abstract, allowing a learner rapidly assess the material
  - Geographical tag, if necessary/possible
  - Time stamp (or time interval), if necessary/possible
  - An index of material's complexity (based on 5-point scale)
  - Formal list of competencies (both basic and obtained during the course)
- For each document - a set of information blocks (e.g., in the form of multimedia documents and / or in short videos) in order to organise the procedure of programmed learning, comprising:
  - The very information blocks (information blocks are mapped with meta-information in the same way as source documents – meta-information of a block is a subset of meta-information of a document to which the block is assigned)
  - Test questions to information blocks with answers (it is desirable to have several alternative formulations of same questions)
  - For incorrect answers, there must be an indication, which topics (basic or topics of the course) are not mastered properly
  - Scheme of possible routes (sequence) of work with information blocks
- For each document - a mind map describing the document

## Notes