

## R3.1 – Guidelines on learning module structure and training methodology.

ANNEX I - The description of the use of the tools for module



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## 1. Glossary of terms, abbreviations and acronyms

Abbreviation / Acronym / Term	Description
CE	Circular Economy
CHAINS	CHALLENGES INNOVATION teams. Collaborative teams of students of the PackAlliance postgraduate programme to work on a specific industry challenge
EACEA	Education, Audiovisual and Culture Executive Agency
HEI	Higher Education Institution
PackAlliance Hubs	Physical places where the academia-industry collaboration within the project will take place
WP	Work Package

Partner shortname	
P1-Campus Iberus	Partner 1 - Campus Iberus (Spain)
P2-Ecoembes	Partner 2 - Ecoembes (Spain)
P3-AGH	Partner 3 - AGH University of Science and Technology (Poland)
P4-Synthos	Partner 4 - Synthos Group (Poland)
P5-TAMK	Partner 5 - TAMK Tampere University of Applied Sciences (Finland)
P6-Pyroll	Partner 6 - Pyroll Group (Finland)
P7-Proplast	Partner 7 - Consorzio per la promozione della cultura plastica - Proplast (Italy)
P8-UNISA	Partner 8 - Università degli Studi di Salerno (Italy)

## Interactive Lecture - lesson (moodle)

**Objectives:** The front teaching in the lecture will be from 10-30% of the subject. Each of the presentations of the front teaching will be recorded.

**Practices:** The duration of this type of the activity will be maximum 10 minutes for each of the presentation, and on the next part will have place the students' activity among others: forum, small group discussion, error identification etc.

## Quiz (moodle)

**Objectives:** The definition of the quiz can be defined as "A test of knowledge, especially as a competition between individuals or teams as a form of entertainment"<sup>1</sup>. The aim of the quiz is to check the level of knowledge, skills and competence which was achieved during the single unit of lesson.

**Practices:** After each unit of the lecture the teacher will prepare 10-15 question from the topic which was presented.

## Active review session

**Objectives:** The aim of active review session is leading to deep learning or prepare students for an exam. Active review session can encourage student's engagement.

**Practices:**

- By the end of the subject teacher can prepare about 15-20 questions checking the details of student's knowledge or skills.
- Students work on problems relating to the review material first alone and then in small groups about 3-4 persons.

## Forum

**Objectives:** forum is organised meeting in which students can talk about a problem or matter. It can be useful additional tool during e-learning. The advantage of forums is lively discussion which help students deeper understanding the matter.

**Practices:** Teacher can start a discussion board assignment by asking each student to respond some question connected with the subject. The amount of questions can be about 10-15.

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<sup>1</sup> <https://www.lexico.com/definition/quiz>, (access 15.01.2021)

## Chat

**Objectives:** Chat is the tool for conversation between students and the teacher. Chat can give the opportunities of asking questions and obtain answers from both sides. It can start discussion. Chat can be useful for checking students' knowledge and skills and specify the ambiguities related to the material processed during classes. By chat teacher can send students useful links or can attach materials.

**Practice:** Teacher can prepare and ask a few (from 5-10) questions connected with the subject. Students also can ask questions to the teacher.

## Building a database

**Objectives:** The database prepared for e-learning platform should focused on the courses and the courses contain. Database should be useful and helpful for students, facilitate the study of the topic and delving into it. The database should be design and build taking into account matching the user and the course content requirement.

**Practice:** The database is designed with a focus on increasing the efficiency of the search function in the web application. The database should be designed for particular subject It should be exact, easy to use and with the possibility of refilling

## Problem based learning

**Objectives:** It is a pedagogical trend aimed at the student. He/she is at the centre of the knowledge transfer process and prompts him to seek answers by himself. Thanks to this method, students can develop critical thinking, draw conclusions from analyses and look for alternative solutions. In addition, students also develop communication skills through the appropriate selection of practical tools by the teacher. Many of the methods using this approach are based on group collaboration. Problem based learning are closely related teaching techniques like: case studies, role-plays, projects.

**Practice:**

- First, the teacher should find the problem and introduce it to students.
- The problem can be taken from different sources, e.g., books, newspapers, articles or movies
- The teacher should explain students the form of exercise based on problem based learning
- The teacher should divide the students into small groups of 3-4 persons
- The problem should motivate students to deeper understanding and seeking the proper solution

## Short students' presentation

**Objectives:** Short students' presentation is a way of practice their knowledge and skills on given topic. There is a wide range of areas and possibilities of preparing presentation by students. This is a chance of fixing and understanding learning material on exact subject by the students. Thanks to the presentation, it is possible to involve other students in the discussion

**Practice:**

- Teacher can introduce a list of a few topics connected with the subject.
- Teacher can let students choose the topic of presentation or designate students who will prepare the presentation
- The presentation should should take about 20 slides x 20 seconds
- Students can prepare presentations in groups consisting of 1-2 persons.

## Small group discussion

**Objectives:** The aim of this activity is to share the thoughts and opinion between the group members. The small group discussion enables to each of the students feel more comfortable with public speaking

**Practice:**

- Teacher prepares topics for discussion related to the topic of a subject;
- Teacher divides the students into groups consisting of 3-4 persons;
- Teacher gives the students the timeline of the discussion;
- Teacher asks the students to write down the 3 main points of the conclusions of the discussion and report them to the group, where it can be widely discussed.

## Think-pair-share

**Objectives:** The aim of this activity is solve the problem given by the teacher. The exercise both stimulates individual thinking as well as discussion with others.

**Practices:**

- Teacher asks the students the question related to the topic of the subject;
- Students have 1-2 minutes for think individual about the answer;
- In next step students have 5 minutes to discuss in pairs the topic;
- For conclusion, they put the answers to the forum where can discuss between group discussion each of the topic.

## Error identification

**Objectives:** The exercise focuses on the critical and creative thinking of the students. Students have to solve the challenge based on given exercises prepared by the teacher. This type of exercises support the transversal skills of the students.

**Practice:**

- Teacher prepare the exercises with the mistakes;
- Students have to individually find the mistakes and improve it for the right one answers

## Peer review

**Objectives:** The peer reviews aim to continually develop the students' work and critical thinking approach based on the observation of other students' work.

**Practices:**

- Teacher asks the student for preparation of the short text, i.e. definition, presentation, thought about the issue;
- In the next step, the other two students have to give the comments for this work;
- The student receives feedback from other students;
- All the process is anonymous.

## Concept map

**Objectives:** The concept map present visual the concepts and ideas and the relationships among them. The exercise helps students to arrange the task into a cause-and-effect sequence and to select relations between phenomena. The tool can be used in workshops, projects, classes laboratories.

**Practice:**

- Teacher gives the students an example of the concept of the phenomenon and asks them to select external and internal stakeholders;
- On the basis of the available data, e.g. text, reports, recordings, students have to deduce or imagine connections

## Case studies

**Objectives:** Case studies "are narratives, situations, select data samplings, or statements that present unresolved and provocative issues, situations, or questions"<sup>2</sup>. The case study method is a part of the problem-based learning method.

The examples of the case studies will be prepared in collaboration with the associated partners and business partners of PackAlliance project. The case studies will be identified in each module by the Partners responsible for the development of the subject. Centre for Learning and Teaching of Columbia University have identified a few types of case studies and strategies for managing case studies which can be implemented during the classes<sup>3</sup>.

**Practice:** When conducting classes, make sure that you choose the right tools and research methods for the level of education. In order to successfully carry out the case study teacher needs to be familiar with the participants of the course. It is essential to include: "*What are the students' needs, interests, and abilities?, What are the key learning objectives? Why should students care?. Which case features are relevant, surprising, confusing, etc.? How is the material sequenced?*"<sup>4</sup>

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<sup>2</sup> Indiana University, Bloomington, Campus Instructional Consulting. (n.d.). Teaching with the case method. In Indiana University Teaching Handbook. Retrieved June 23, 2010

<sup>3</sup> Centre for Learning and Teaching of Columbia University, <https://ctl.columbia.edu/resources-and-technology/resources/case-method/> (available on 01.11.2020).

<sup>4</sup> C. Roland Christensen, Questions for Class Discussions Center for Teaching and Learning, Harvard Business School, [https://www.hbs.edu/teaching/Documents/Questions\\_for\\_Class\\_Discussions\\_rev.pdf](https://www.hbs.edu/teaching/Documents/Questions_for_Class_Discussions_rev.pdf) (access: 5.11.2020)



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### PROJECT CONSORTIUM



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