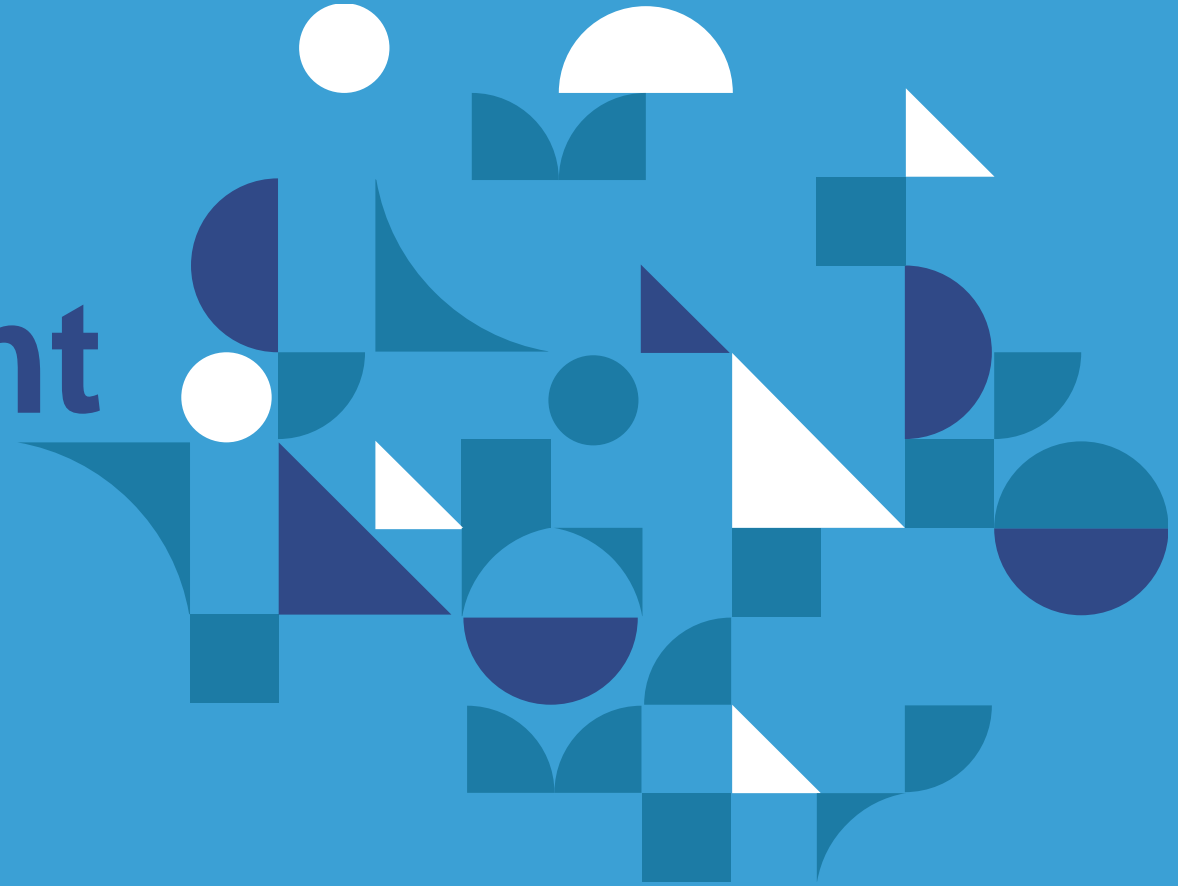




Industrial Engineering and  
Management of European  
Higher Education

# WP4 development



This project has received funding  
from the European Union's Erasmus+  
programme under grant agreement  
N. 2018-2279/001-001

# WP4.- Turning training courses into E-learning courses and application to other partner universities

## Outline

- Introduction
- Presentation of R4.1
- Presentation of R4.2
- Planning next WP4 activities



# WP4.- Turning training courses into E-learning courses and application to other partner universities

## Aim and objectives

- To prepare e-learning modules starting from the training materials prepared and tested in WP3. **These modules (prepared according to the BoK) will be public and available for everybody interesting in them**
- To learn, for partner universities and companies, how to build e-learning materials
- To testing the **effectiveness of blended courses** (providing traditional classes and e-learning)

## Tasks

T4.1 - Setup the technical environment for the e-learning system, including serious gaming and learning routes extensions

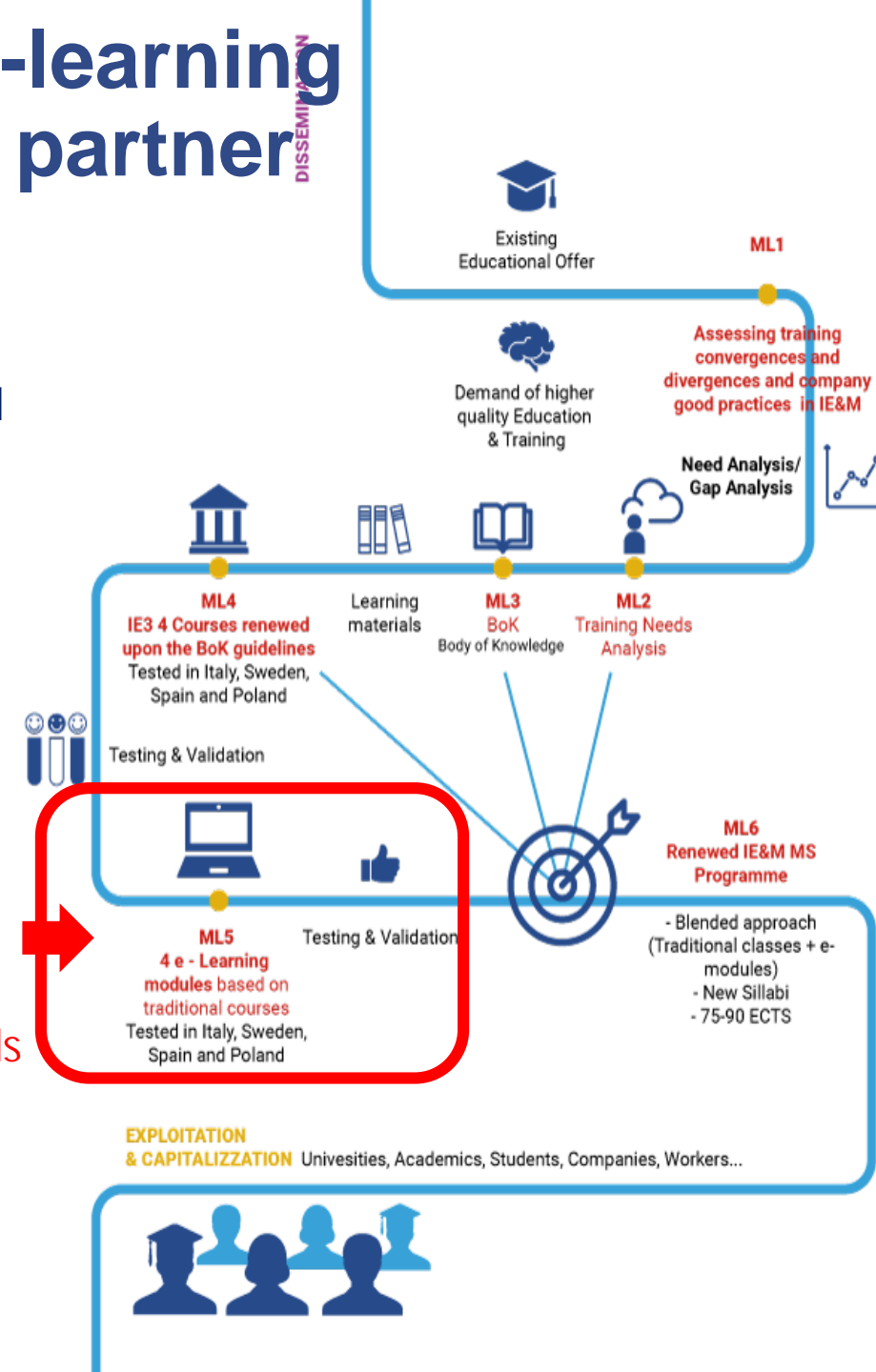
T4.2 Defining pedagogical criteria for the e-learning courses and development of a Pilot Action Plan

T4.3 Preparation of e-learning modules starting from the training materials prepared

T4.4 Pilot test of the e-learning modules within the partner Universities

T4.5 Analysing the feedback received by the users

T4.6 Development of the required improvements



# WP4.- Turning training courses into E-learning courses and application to other partner universities

	Oct-20	Nov-20	Dec-20	Jan-21	Feb-21	Mar-21	Apr-21	May-21	Jun-21	Jul-21	Aug-21	Sep-21	Oct-21	Nov-21	Dec-21	Jan-22	Feb-22	Mar-22	Apr-22	May-22	Jun-22	Jul-22	Aug-22	Sep-22	Oct-22
	M12	M13	M14	M15	M16	M17	M18	M19	M20	M21	M22	M23	M24	M25	M26	M27	M28	M29	M30	M31	M32	M33	M34	M35	M36
<b>WP3</b>																									
T3.1 - Preparation of the IE3 courses Action Plan																									
T3.2 - Developing new learning materials with the support of all partners and companies' formal review																									
T3.3 - Developing common evaluation materials for the course																									
T3.4 - Piloting and peer-evaluation of the new courses																									
T3.5 - Follow-up and revision of the training materials																									
<b>WP4</b>																									
T4.1 - Setup the technical environment for the e-learning system, including serious gaming and learning routes extensions																									
T4.2 - Defining pedagogical and technical criteria for the e-learning courses and development of a Pilot Action Plan																									
T4.3 - Preparation of e-learning modules starting from the training materials prepared;																									
T4.4 Pilot test of the e-learning modules within the partner Universities																									
T4.5 - Analysing the feedback received by the users																									
T4.6 - Development of the required improvements																									
<b>WP5</b>																									
T5.1 - Defining the subjects to be included in a full redesigned IE&M Master course																									
T5.2 - Redesigning the Syllabi																									
T5.3 - Exploiting the new courses and capitalization																									
<b>WP6</b>																									
<b>WP7</b>																									
<b>WP8</b>																									
<b>WP9</b>																									



# WP4.- Turning training courses into E-learning courses and application to other partner universities

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# WP4.- Turning training courses into E-learning courses and application to other partner universities

## DELIVERABLES (I)

R 4.1: Memorandum on technical criteria for the development of e-learning modules and requirements of the technical environment. (M23) **UPM**

- UPM produced a document in which the main technical requirements and features for both the e-learning modules to be developed by the partners and the environment where to store them are described.
- Indeed, a common live-testbed for implementation was provided with access rights to the partners according to their profile.

The T4.1 is under the UPM responsibility, however it would be great to collect some aspects considered as requirements from the approach you want to use, in order to have a common view and a useful testbed for usage.

Only LIU has provided few details up to now. Then UPM moved forward to create the promised deliverables.



# WP4.- Turning training courses into E-learning courses and application to other partner universities



## OUTLINE

Introduction .....	5
Technical requirements for e-learning modules.....	5
Technical requirements for e-learning environment.....	6
Live testbed environment provided.....	8
Ways for delivering courses .....	9
Ways for exchanging courses .....	10
Conclusions .....	10
References.....	11

Deliverable: MEMORANDUM ON  
TECHNICAL CRITERIA FOR THE  
DEVELOPMENT OF E-LEARNING  
MODULES AND REQUIREMENTS OF THE  
TECHNICAL ENVIRONMENT

# WP4.- Turning training courses into E-learning courses and application to other partner universities



URL: <https://apiict01.etsii.upm.es/Moodle/>

## Available courses

### TPPE74 Design and Development of Manufacturing Operations

Teacher: [Mathias Henningsson](#)  
Teacher: [Fredrik Persson](#)  
Teacher: [Eskil Rehme](#)

*Artificial Intelligence in Operations Management* is part of the course *TPPE74 Design and Development of Manufacturing Operations*.

The module is entirely designed and delivered by the partner company partner Implema. The content is focusing on Machine Learning and provides examples of that in Operations Management.

In the course, during the spring 2022, the module will be delivered as a lecture (2 hours) and a seminar (2 hours).

### Project Management

Teacher: [Joaquín Ordieres-Meré](#)

Advanced Project Management Course for the Master in Industrial Organization Degree.

It is supposed that students already have notions about organization stuff, such as organizational roles and structures (functional, matrix, network, holacracy, etc.)

Indeed, basic knowledge of maths and statistics is expected as well.





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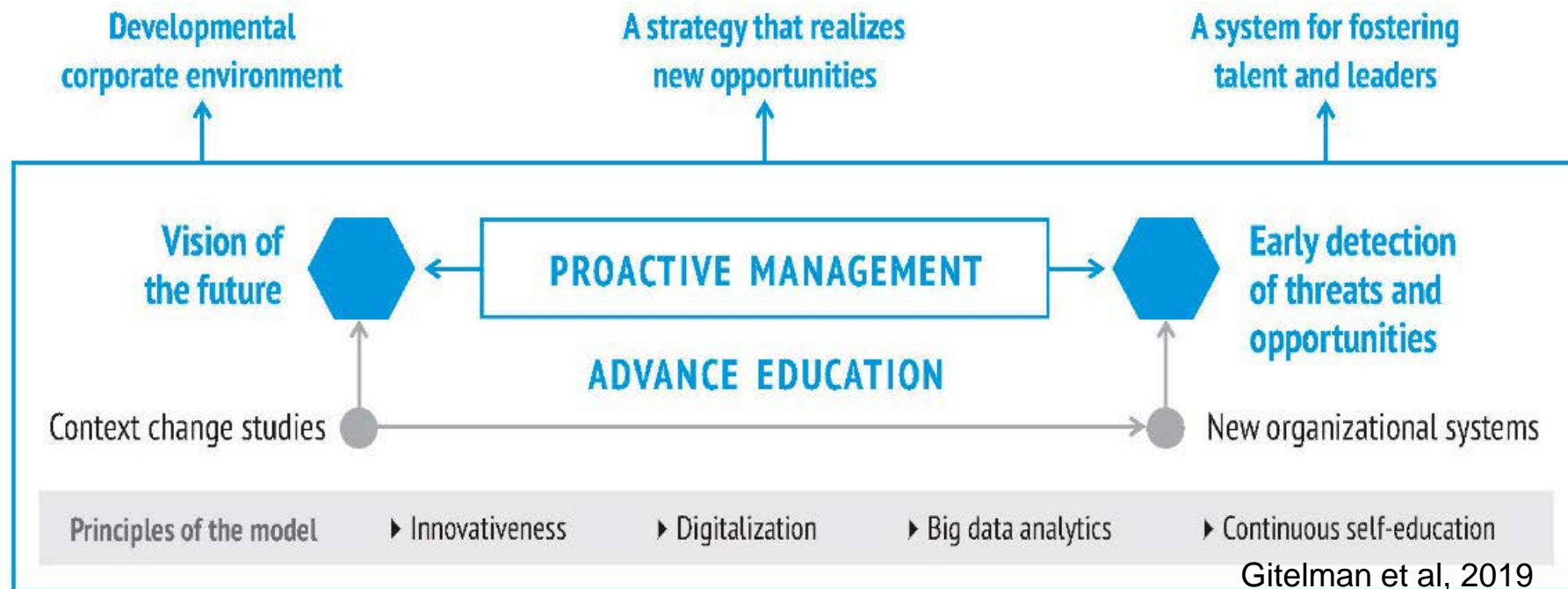


# WP4.- Turning training courses into E-learning courses and application to other partner universities

## DELIVERABLES (II)

### R 4.2: E-learning Pedagogical Strategy. (M24) UPM and all

- The **Report describes the best pedagogical practices to be followed for the preparation of the e-learning modules.** It will contain guidelines and practical information for the partners to develop the e-learning modules



BoK  
(ML3)



# WP4.- Turning training courses into E-learning courses and application to other partner universities

## T4.2 Defining pedagogical criteria for the e-learning courses and development of a Pilot Action Plan

UPM brought its ideas as a reference (*microlearning + knowledge based graph for theoretical learning + competence based collection system + practical implementation*) meanwhile other partners contribute according to their view.

*It is encouraged to provide opinions, variants or alternatives or improvements during October (deadline for this task).*



# WP4.- Turning training courses into E-learning courses and application to other partner universities

## T4.2 Defining pedagogical criteria for the e-learning courses and development of a Pilot Action Plan



### OUTLINE

Introduction .....	4
Pedagogical models to be supported.....	4
Implementation details.....	6
Conclusions .....	9
References.....	10

Deliverable: E-LEARNING PEDAGOGICAL  
STRATEGY

Date: 31/08/2021

# WP4.- Turning training courses into E-learning courses and application to other partner universities

## Outline

- Introduction
- Presentation of R4.1
- Presentation of R4.2
- **Planning next WP4 activities**



# WP4.- Turning training courses into E-learning courses and application to other partner universities

## DELIVERABLES (II)

R 4.3: Prototype of e-learning modules. (M28) **All Partners**

- This output will be developed by the all the partners and put coherently together by the WP leader
- The prototyped e-learning course will receive feedback from all partners, once completed by universities and validated by partner companies.

R 4.4: IE3 - E-learning modules Implementation Action plan. (M31) **UPM & All partners**

- The Action Plan will take describe how the testing phase of the e-learning modules should be implemented in the 4 partner countries (*15 students per foreign module + Companies if interested*).

R 4.5: IE3 - E-learning modules evaluation. (M31) **UPM & All Partners**

- This document reports the feedback concerning all Pilot Actions carried out in each partner country. Each University will analyse all the data and suggestions provided by participants.

R 4.6: Final version of e-learning modules. (M35) **UPM & All Partners**

- The improved materials will be assembled by UPM as described in T4.6 and the companies will ensure the coherence of the overall output.

• Each module will reflect the main features described in the R4.2 with, in addition, the improved parts developed in T4.5.

This result will be released online - after all the partners ultimate validation - by UPM on the IE3 website platform for the wide public access.



# WP4.- Turning training courses into E-learning courses and application to other partner universities

## TIME FRAMEWORK

	Oct-21	Nov-21	Dec-21	Jan-22	Feb-22	Mar-22	Apr-22	May-22	Jun-22	Jul-22	Aug-22	Sep-22	Oct-22
	M24	M25	M26	M27	M28	M29	M30	M31	M32	M33	M34	M35	M36
T4.3 - Preparation of e-learning modules starting from the training materials prepared;		■	■	■	■	■	■						
T4.4 Pilot test of the e-learning modules within the partner Universities						■	■	■	■				
T4.5 - Analysing the feedback received by the users									■	■			
T4.6 - Development of the required improvements										■	■	■	

R 4.3: Prototype of e-learning modules.

(M30) **All Partners**

- This output will be developed by the all the partners and put coherently together by the WP leader
- The prototyped e-learning course will receive feedback from all partners, once completed by universities and validated by partner companies.



# WP4.- Turning training courses into E-learning courses and application to other partner universities

## TIME FRAMEWORK

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T4.4 Pilot test of the e-learning modules within the partner Universities													
T4.5 - Analysing the feedback received by the users													
T4.6 - Development of the required improvements													

### R 4.4: IE3 - E-learning modules Implementation Action plan. (M32) **UPM & All partners**

- The Action Plan will take describe how the testing phase of the e-learning modules should be implemented in the 4 partner countries.





# WP4.- Turning training courses into E-learning courses and application to other partner universities

## REMOTE USAGE

T 4.4: IE3 - E-learning modules Implementation Action plan. (M32) **UPM & All partners**

- The Action Plan will take describe how the testing phase of the e-learning modules should be implemented in the 4 partner countries. (*15 students per foreign module + Companies if interested*).

Each partner **shall identify component(s)** from e-Learning courses developed by other partners, to be used as a tool. The goal is not just the usage but also the assessment of the methodology and supporting documentation. Support from the developers will be provided by the partner who developed the component. *Companies are welcome to identify module usage.*

- By Jan 2022 expressions of interest will be exchanged (with UPM in cc) [*The earlier the better*]. There is a dropoff box in the website to browse all the module's syllabus here:



(<https://bit.ly/3ogRglv>)

# WP4.- Turning training courses into E-learning courses and application to other partner universities

## TIME FRAMEWORK

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T4.3 - Preparation of e-learning modules starting from the training materials prepared;		■	■	■	■	■	■						
T4.4 Pilot test of the e-learning modules within the partner Universities						■	■	■	■				
T4.5 - Analysing the feedback received by the users									■	■			
T4.6 - Development of the required improvements										■	■	■	

R 4.5: IE3 - E-learning modules evaluation. (M33) **UPM & All Partners**

- This document reports the feedback concerning all Pilot Actions carried out in each partner country. Each University will analyse all the data and suggestions provided by participants.



# WP4.- Turning training courses into E-learning courses and application to other partner universities

## TIME FRAMEWORK

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T4.3 - Preparation of e-learning modules starting from the training materials prepared;		■	■	■	■	■	■						
T4.4 Pilot test of the e-learning modules within the partner Universities						■	■	■	■				
T4.5 - Analysing the feedback received by the users									■	■			
T4.6 - Development of the required improvements										■	■	■	

R 4.6: Final version of e-learning modules.

(M35) **UPM & All Partners**

- The improved materials will be assembled by UPM as described in T4.6 and the companies will ensure the coherence of the overall output.
- Each module will reflect the main features described in the R4.2 with, in addition, the improved parts developed in T4.5.
- This result will be released online - after all the partners ultimate validation - by UPM on the IE3 website platform for the wide public access.



# WP4.- Turning training courses into E-learning courses and application to other partner universities

## NEXT ACTIVITIES

### Overdue

- The academic partners must provide the requested information for T4.1 as soon as possible (in particular module name, professors, etc.) (*deadline: Yesterday*)
- The academic partners are kindly requested to contribute to R4.2 (D4.2) regarding their specific details for pedagogical approach, when different from the already included by UPM (*deadline 20/10/2021*)

### Coming Actions

1. Create contents inside the moodle platform. Probably some help will be required, therefore, do not hesitate to ask. *UPM is already doing it, in parallel with the WP3 course delivery.* (start: Nov 2021 – Apr 2022) R4.3
2. Implement / Test the module content (deadline Mar 2022 – Jun 2022). In Nov 2021 *UPM will circulate a form* to collect details about the planned characteristics and *it will propose a test to check opinions about the implementation (this last test will be defined inside Moodle, because of coherence reasons)*. The UPM is running the implementation as well, in parallel with the WP3 course delivery, because we can't end-up the next course semester inside the Project time-framework. R4.4



3. Assessment *The UPM will prepare a report based on outcome from 2* having each course/module as selected granularity level. (deadline Jun 2022 – Jul 2022) R4.5
4. Improvement of modules according to 3. (deadline Jul 2022 – Sep 2022) R4.6 [Course backup to be uploaded to IE3 website]. *Each partner will improve their module(s) and UPM will make backups [.mbz]*

# **WP4.- Turning training courses into E-learning courses and application to other partner universities**

**Q&A?**





**Thank you!**