

Evaluation and adjustment of the HEIN4.0 project deliverables



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Porto, 9th of November 2023*



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STUDY OF CAPACITY BUILDING PRACTICES FOR COLLABORATION WITH INDUSTRY

Administrators (Rector Prof. Vyacheslav Truba, Head of the International Cooperation Department, Prof. Hrinchenko Yyurii visited EU project partner KU LEUVEN Technology Campus Ghent (1 week in September 2024) to learn institutional issues – institutionalization, interfaculty collaboration, feedback to curriculum from industry etc., including Volvo Cars Ghent Visit.

Participants met the criteria as ability to influence decision-making at own HEI, experience in university management reform, language skills, commitment to project goals.

Mobility logistics : 2 administrative staff members from ONMU.



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TABLE OF ACHIEVED / PLANNED RESULTS

Title and reference number of the work package (WP)	WP6 Exploitation
Indicators of achievement and or/performance as indicated in the project proposal	<p>6.1 1 course piloted and validated at ONMU Integration of Industry 4.0 into production and management systems;</p> <p>6.2 Industry 4.0 Business Management module piloted and validated at each HEI;</p> <p>6.3 ONMU Lab performed 1 consultancy service;</p> <p>6.4 Courses, modules, list of services are revised and updated, integrated to the web-page https://cutt.ly/pwTRpXhU of the Certification Centre and Lab https://onu.edu.ua/en/academic-projects/virtual-factory-learning-lab-industry-4-0 ;</p> <p>6.5 Round table was performed once at ONMU;</p> <p>6.6 Colloquium performed three times at ONMU;</p> <p>6.7 Business Sustainability Plans developed and approved for each ONMU Lab;</p> <p>6.8 At least 3 web event performed.</p>



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ACTIVITIES CARRIED OUT TO DATE TO ACHIEVE THIS RESULT

Activity N°	Activity Title	Start date	End date	Place	Description of the activity to be carried out	Specific and measurable indicators of progress
6.1.	Pilot teaching to industrial staff	01/04 /2022	<u>23/07</u> /2023	Ukraine	The teaching towards industry Integration of Industry 4.0 into production and management systems ; Certificates at ONMU Web-site of Certification Centre https://drive.google.com/drive/folders/1RrZxUuUUdadply1aOXsB6MkNtnhJyp6M	1 Number of the attendees of the courses - 17

ACTIVITIES CARRIED OUT TO DATE TO ACHIEVE THIS RESULT

Activity N°	Activity Title	Start date	End date	Place	Description of the activity to be carried out	Specific and measurable indicators of progress
6.2.	Pilot teaching to university students	01/02 /2022	14/10 /2022	Ukraine	Newly developed within the Activity 2.2 taught module "Industry 4.0 Business Management" for Bachelor students and "Business Management Models Industry 4.0" for Master students started at ONMU since February 2022 and was delivered.	2 new modules developed and taught at ONMU universities. Number of students followed the new modules: Bachelor – 41; Master – 0.

ACTIVITIES CARRIED OUT TO DATE TO ACHIEVE THIS RESULT

Activity N°	Activity Title	Start date	End date	Place	Description of the activity to be carried out	Specific and measurable indicators of progress
6.3.	Services of Labs	01/07 /2022	14/10 /2022	Ukraine	Virtual Factory Learning Labs was staffed with motivated and trained people need to become self-sustainable which will guarantee that the EU funding is spent appropriately. Labs have started from simple services (e.g. consultancy) and delivery of the bachelor and master students courses;	List of services available at Labs for industry https://onu.edu.ua/en/academic-projects/virtual-factory-learning-lab-industry-4-0 Consulting services; teaching courses for industry;

ACTIVITIES CARRIED OUT TO DATE TO ACHIEVE THIS RESULT

Activity N°	Activity Title	Start date	End date	Place	Description of the activity to be carried out	Specific and measurable indicators of progress
6.4.	Adjustment of deliverables	01/04 /2022	14/10 /2022	Georgia, Ukraine	Based on the experience attained, results of validation and feedback have been collected from the Reference Groups at each HEI to set up recommendations for updating of the major deliverables.	Recommendations to improve course development were considered according to the questionnaires.

ACTIVITIES TO BE CARRIED OUT TO ACHIEVE THIS OUTCOME (BEFORE THE END OF THE PROJECT)

Activity N°	Activity Title	Start date	End date	Place	Description of the activity to be carried out	Specific and measurable indicators of progress
6.1.	Pilot teaching to industrial staff	15/10 /2022	31/12 /2023	Ukraine	Course validation included assessment of quality based on course description, checking the tutorials, attendance of open lecture by Reference Group representative and collection of feedback from the attendees was done.	Number of courses delivered to industrial staff – 1. Number of the attendees of the courses.: 17

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Activity N°	Activity Title	Start date	End date	Place	Description of the activity to be carried out	Specific and measurable indicators of progress
6.2.	Pilot teaching to university students	15/10 /2022	31/12 /2023	Georgia, Ukraine	Newly developed within the Activity 2.2 taught module "Industry 4.0 Business Management" for Bachelor students and "Business Management Models Industry 4.0" for Master students started at ONMU since February 2022 and was delivered.	2 new modules developed and taught at ONMU universities. Number of students followed the new modules: Bachelor – 31; Master – 10.

ACTIVITIES TO BE CARRIED OUT TO ACHIEVE THIS OUTCOME (BEFORE THE END OF THE PROJECT)

Activity N°	Activity Title	Start date	End date	Place	Description of the activity to be carried out	Specific and measurable indicators of progress
6.3.	Services of Labs	15/10 /2022	31/12 /2023	Ukraine	<p>The services of Labs will continue during the extension period.</p> <p>https://onu.edu.ua/en/academic-projects/virtual-factory-learning-lab-industry-4-0</p>	<p>List of services available at ONMU Lab for industry</p> <ul style="list-style-type: none"> - Testing business architecture and business models in Industry 4.0. - Courses for students: Business Management in Industry 4.0 (Bachelor) Business and management models in Industry 4.0 (master's degree) - Courses for stakeholders (partners, representatives of employers, business): Integration of Industry 4.0 into production and management systems <p>4.0</p>

- Програми вступних іспитів до аспірантури
- Новини та оголошення
- Вступна кампанія
- Іноземним абітурієнтам
- Вступ до Коледжу
- Вступ до магістратури
- Вступ до аспірантури
- Освітні центри "Крим-Україна" та "Донбас Україна"
- Приймальна комісія
- Програми і розклад

Інтеграція Industry 4.0 у виробничі та управлінські системи

Опубліковано: 11 липня 2023 Останнє оновлення: 11 липня 2023

Сертифікати 19 - 23 червня 2023 р.

Інтеграція Industry 4.0 у виробничі та управлінські системи

Фокус програми: формування практичних навичок інженерів та управлінців, здатних аналізувати тренди Industry 4.0 та інтегруватися у світовий діджитал бізнес-простір.

Цільова аудиторія: всі, хто прагне впроваджувати практичні аспекти європейської та світової інтеграції в рамках діджитал-систем, платформ та розвитку:

Результати навчання:

- знання про європейські бізнес-тренди Industry 4.0
- інтеграція в міжнародні ланцюги створення доданої цінності,
- працювати з інструментами віртуальної та доповненої реальності з використанням віртуальної та доповненої реальності
- впровадження відповідних змін в систему управління.

Програма є особливо корисною для:

- керівників проектів з цифрової трансформації та євроінтеграції,
- інженерів, які виконують керівні ролі; інженери, які мають впровадити технології Industry 4.04;
- керівників усіх рівнів, які впроваджують діджитал-технології;
- бізнес-аналітиків; дослідників та консультантів з побудови управлінських систем (структур);

Переваги для слухачів програми:

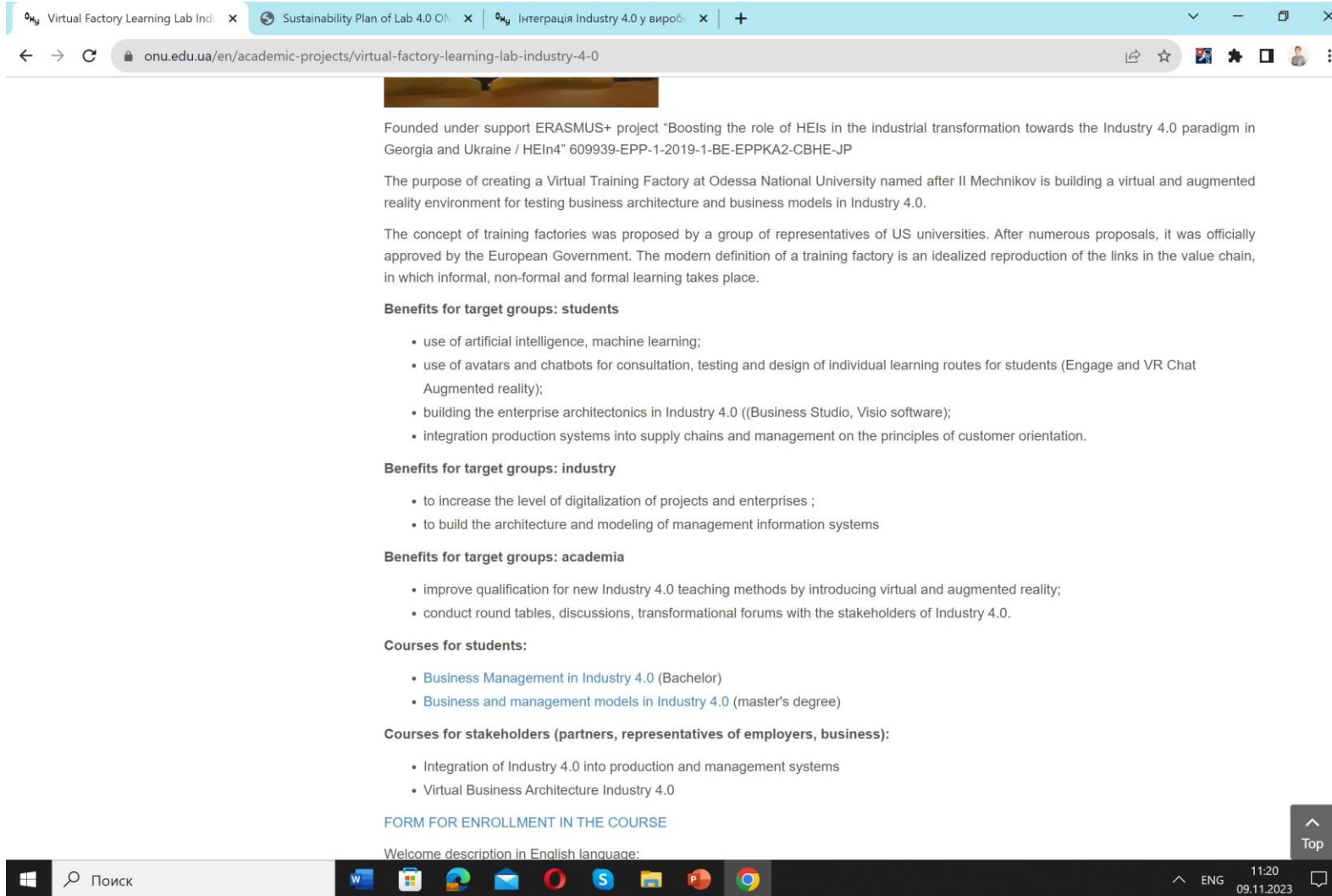


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COURSES FOR INDUSTRY VISIBILITY ON THE WEB OF ONMU LAB 4.0

Part 2



Virtual Factory Learning Lab Indi x Sustainability Plan of Lab 4.0 ON x Інтеракція Industry 4.0 у вироб x +

onu.edu.ua/en/academic-projects/virtual-factory-learning-lab-industry-4-0

Founded under support ERASMUS+ project "Boosting the role of HEIs in the industrial transformation towards the Industry 4.0 paradigm in Georgia and Ukraine / HEIn4" 609939-EPP-1-2019-1-BE-EPPKA2-CBHE-JP

The purpose of creating a Virtual Training Factory at Odessa National University named after II Mechnikov is building a virtual and augmented reality environment for testing business architecture and business models in Industry 4.0.

The concept of training factories was proposed by a group of representatives of US universities. After numerous proposals, it was officially approved by the European Government. The modern definition of a training factory is an idealized reproduction of the links in the value chain, in which informal, non-formal and formal learning takes place.

Benefits for target groups: students

- use of artificial intelligence, machine learning;
- use of avatars and chatbots for consultation, testing and design of individual learning routes for students (Engage and VR Chat Augmented reality);
- building the enterprise architectonics in Industry 4.0 ((Business Studio, Visio software);
- integration production systems into supply chains and management on the principles of customer orientation.

Benefits for target groups: industry

- to increase the level of digitalization of projects and enterprises ;
- to build the architecture and modeling of management information systems

Benefits for target groups: academia

- improve qualification for new Industry 4.0 teaching methods by introducing virtual and augmented reality;
- conduct round tables, discussions, transformational forums with the stakeholders of Industry 4.0.

Courses for students:

- [Business Management in Industry 4.0 \(Bachelor\)](#)
- [Business and management models in Industry 4.0 \(master's degree\)](#)

Courses for stakeholders (partners, representatives of employers, business):

- Integration of Industry 4.0 into production and management systems
- Virtual Business Architecture Industry 4.0

[FORM FOR ENROLLMENT IN THE COURSE](#)

Welcome description in English language:

Поиск

11:20 09.11.2023



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ACTIVITIES TO BE CARRIED OUT TO ACHIEVE THIS OUTCOME (BEFORE THE END OF THE PROJECT)

Part 2

Activity N°	Activity Title	Start date	End date	Place	Description of the activity to be carried out	Specific and measurable indicators of progress
6.4.	Adjustment of deliverables	15/10 /2022	31/12 /2023	Ukraine	<p><i>Adjustment of the curriculum:</i></p> <p>based on the feedback from trainees and knowledge benchmarking. The adjustment measures (e.g. the courses structure, tutorials, duration, emphasis given to some specific topics, etc.) will be developed after the 1st evaluation/adjustment workshop (KTH, May 2023) and implemented by Dec 2023 in order to ensure that from the Fall semester of 2023/2024 academic year and beyond the curriculum is up-to-date to the Industry 4.0 trends and to the business needs..</p>	<p>Recommendations from the 1st and 2nd evaluation workshops.</p> <ul style="list-style-type: none"> - Introducing SDG; Introducing learning outcomes oriented teaching (KTH 2023); - introducing projects for AR/VR – interdisciplinary approach – University level (KU LEUVEN 2023).



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6.5.	Stakeholders' round tables led by Labs	01/02 /2023	30/11 /2023	Ukraine	<p>Round Tables will be organized at each PC HEI by Labs and held semi-annually (2 sessions at each HEI during the project lifetime) for collegiate discussion of the project implementation with stakeholders (predominantly - industry) outside the project team.</p> <p>Round Tables will bring together representatives from academia, industry and authorities thus inculcating the culture of dialogue towards socio-economic challenges of 4th Industrial Revolution (e.g. competitiveness, employability, skills shortage etc).</p>	<p>1 Round Tables held.</p> <p>Lists of participants of Round Tables.</p> <p>Conclusions and recommendations delivered within Round Tables – in progress.</p>

ACTIVITIES TO BE CARRIED OUT TO ACHIEVE THIS OUTCOME

Stakeholders' round tables led by Labs. Student involvement



21-22 September 2023 Odesa National Mechnikov University conducted in Odesa Regional Chamber of Commerce the InfoSession and Roundtable for Innovation and Entrepreneurship Ecosystem Representatives.



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6.6.	Permanent colloquium for retraining of teaching staff	14/10 /2023	31/12 /2023	Ukraine	Staff coaching scheme will bring more staff members into project action. Each HEI will launch the recurrent colloquiums where the staff trained during the project will share the knowledge and experience attained. Invitation of lecturers from outside to reflect on some specific topics of Industry 4.0 is also planned. 4 coaching sessions will be conducted in each HEI to ensure that the system will fit into normal practices after the project lifetime.	Number of coaching sessions organized. Number of attendees of coaching sessions. Feedbacks from the attendees of coaching sessions. - in progress.

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Activity N°	Activity Title	Start date	End date	Place	Description of the activity to be carried out	Specific and measurable indicators of progress
6.7.	Business Sustainability Plan (BSP)	01/03 /2023	30/11 /2023	Ukraine	<p>Business Sustainability Plans was developed by ONMU Lab covering period from 2024 through 2026.</p> <p>The strategic aspects needed to ensure sustainable exploitation:</p> <ul style="list-style-type: none"> - ONMU balance sheet, rectors' sorder 	<p>Business Sustainability Plans developed for ONMU Lab, including further activities, necessary budget, KPI.</p>

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Activity N°	Activity Title	Start date	End date	Place	Description of the activity to be carried out	Specific and measurable indicators of progress
6.8.	International network of Labs	01/05 /2023	31/12 /2023	Georgia, Ukraine	The webpages of Labs' on universities websites is the basis for international platform for networking and for collaboration with industry. International networking may bring additional projects and resources for the Labs thus serving the project's sustainability in a long-term.	<p>International Cooperation Agreement KU LEUVEN</p> <p>NCURA network participation, BTU Georgia) – ONMU (Ukraine).</p> <p>VAM-Realities Network membership of</p> <p>1 administrative (Yurii Hrinchenko) and 1 teaching staff (Iryna Nyenno)</p>

ADDITIONAL WORKSHOPS

2 additional workshops are necessary to organize for after-pilot evaluation and adjustment of the developed curriculum, Higher Education 4.0 Concept and Labs structure:

- 1st workshop (KTH, May 2023) – for elaboration of adjustments for curriculum – 3 attendees from ONMU, administrative (Dean of the Faculty of Economics and Law Prof. Liudmyla Tokarchuk, Head of the Institute of International Education As. Prof. Nataliia Kriuchkova) and teaching staff (Prof. Iryna Nyenno);
- 2nd workshop (IPP, Oct 2023) – for elaboration of the adjustments for Higher Education 4.0 Concept and improvement of Labs' structure – 1 attendee from ONMU, administrative staff - Dean of the Faculty of Economics and Law Prof. Liudmyla Tokarchuk.



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THANKS

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