

COOPERA

Integrating Dual Higher Education In Moldova and Ukraine

FLEXIBLE and GENERIC Dual Higher Education Model (DHEM) for Moldova and Ukraine

Deliverable 2.1.

DUAL
HIGHER
EDUCATION



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DUAL HIGHER EDUCATION IN MOLDOVA AND UKRAINE



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DUAL HIGHER EDUCATION IN MOLDOVA AND UKRAINE

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PI-ASEM/MD

Academy of Economic Studies of Moldova

Flexible and generic Dual Higher Education Model
(DHEM)

Project Acronym:	COOPERA
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A2.1.3. Dual Higher Education Model (DHEM) of the P1.Academy of Economic Studies of Moldova

1. The scope of DHEM:

Dual education in higher education institutions is an alternative form of education, which in the training of young specialists places a significant emphasis on practical skills' training in the real work environment, with a high degree of involvement in this process of business representatives. This implies an intense and complex collaboration between two basic partners: the educational institution and the economic units, offering multiple advantages for all the stakeholders involved: students, economic agents, universities, state.

Dual education at the higher education level is a novelty for the educational system of the Republic of Moldova. It is an untapped opportunity to combine the development of theoretical knowledge with the training of practical skills in real business environments.

Namely, the introduction of dual education at a higher level of training will allow effectively combining the development of knowledge, skills and attitudes appropriate to each context by collaborating with the business environment, thus providing opportunities to capitalize on theoretical skills in the real sector.

Dual education is a form of training in which all parties have only to gain, if there is motivation, a unique understanding of how to achieve collaboration and delegate responsibilities.

2. The objectives of the model:

- The study on companies needs for DHE, carried out within the COOPERA project, highlighted the fact that the business environment feels an acute need in specialists with higher education, but is not satisfied with the level of training of graduates of higher education institutions. Thus, the main objective of DHEM is to contribute to the organization of a training process for future specialists, to ensure the national economy with highly qualified staff, who possess not only theoretical knowledge but also practical skills;

- DHEM must correspond to the specifics of the existing economic and cultural context in the Republic of Moldova. It should be kept in mind that until today there have been no examples of close collaboration between universities and companies in the training of future specialists, each working in this direction independently. Thus, the second major objective of DHEM is to reflect the needs of all stakeholders and motivate them to be actively involved. Only through the joint effort of economic units and higher education institutions will it be possible to implement viable dual higher education in the Republic of Moldova;

- DHEM needs to take into account the interests of students, who will have more tasks to do compare to those who traditionally study at universities. Ongoing mentoring by both institutions and companies should be ensured for appropriate guidance at each stage of the study process;

- DHEM must comply with the requirements of the National Qualifications Framework and the Higher Bachelor's Degree Framework Plan (Cycle I) from 2020, which sets out the basic requirements for the development, revision and modification of the Curricula developed by higher education institutions in Republic of Moldova.



3. The structure of the model includes the following components:

a) integral motivation:

ASEM has chosen to redesign and pilot as Dual the existing bachelor study programs: Business and Administration (BA) and Applied Informatics (AI). This decision is based on several considerations:

- First of all, students studying in these specialties can do in-company training in companies in any field and of any size;
- Another important moment is the fact that there is a high demand for these specialties, with a significant number of students enrolled annually;
- International statistics show that in the countries where DHE is implemented, the most requested study programs offered in a dual way are in the field of BA and IT;
- The study on companies needs for DHE, carried out within the COOPERA project, showed clearly that organizations from the Republic of Moldova are ready to work with higher education institutions to train IT specialists - 64%, engineers - 36%, managers - 32%, accountants - 31.82%, etc.

Thus, we can conclude that most economic units in the country have a need for specialists in those fields.

b) organisation for a dual higher education course (integrated model in existing programme or independent model):

An integrated model in the existing program was chosen for ASEM. This implies that for students who study dually, there are no separate subdivisions in the organizational structure of ASEM. For example, at ASEM within the Faculty of Business Administration, in the specialty Business and Administration there will be separate groups, which will study both traditional and dual way.

The integrated model will make it possible to facilitate certain advantages: it is not necessary to develop a completely new curriculum and to attract new teachers, and it is possible to organize lectures in larger groups.

At the same time, it will be necessary to draw more attention to the integration of the in-company training period in the educational process, without negatively affecting the quality of teaching.

c) distribution of the training hours (theoretical and practical) in the university and at the dual partner economic agent (argumentation for this distribution):

Following consultations with company representatives, it was decided to choose the following training model: **60% of the total number of study hours will be spent at the institution, 40% at the company** (figure 1).

	Semester I		Semester II		Semester III		Semester IV		Semester V		Semester VI		Total	
	hours	%	hours	%	hours	%	hours	%	hours	%	hours	%	hours	%
Study in the university	652	70,1	645	69,4	594	66	456	50,7	564	62,7	196	21,8	3107	56,9
In-company training study	278	29,9	285	30,6	306	34	444	49,3	336	37,3	704	78,2	2353	43,1
Total	930	100	930	100	900	100	900	100	900	100	900	100	5460	100

Figure 1. Share of the number of training hours at the university and enterprise (theoretical and practical), from the total number of study hours for the BA program, per semester

In this way, all lectures will take place at the university, being taught by tenured professors and specialists attracted from the business environment. Seminars and laboratory lessons will be divided. Some of them will be spent at the university, and the other part will be done in the economic units. Likewise, the individual study will be carried out both within ASEM and at the partner economic agents (figure 2).

Name of the course unit	Number of hours			Number of hours by types of activities							Evaluation form	Nr. EC TS
	Total	Direct contact	Individual study	Lecture	Seminar		Laboratory		Individual study			
					University	Company	University	Company	University	Company		
Microeconomics	150	60	90	30	16	14			45	45	E	5
Economic mathematics	150	60	90	30	30				90		E	5
Economic informatics	150	60	90	14			34	12	45	45	E	5
Business Law	150	60	90	30	16	14			45	45	E	5
The art of communication and professional ethics	150	60	90	30	16	14			45	45	E	5
Foreign language (Eng., French, German, Spanish)	150	90	60		76	14			30	30	E	5
Physical education I	30	30	0		30				0		V	
Total subjects semester 1	930	420	510	134	184	56	34	12	300	210	6E / 1 V	30

Figure 2. Study process plan for the BA program, first semester / first year of studies



d) form of in-company training for students:

The distribution of training hours (theoretical and practical) in the university and at the economic agent will be organized according to a **monthly model**. This means that each semester will be divided into two parts. The first part will include the theoretical training of students, which will take place within ASEM and will last about 2 months (depending on the semester and year of study).

Then will follow the practical training, which will be carried out in the economic units and will also last about 1.5 - 2 months (depending on the semester) (figure 3).

UNIVERSITY CALENDAR									
Year of study	Sem. I (15 weeks)		Sem. II (15 weeks)		Examination sessions		Vacations		
	Study in the university	In-company training study	Study in the university	In-company training study	Sem. I	Sem. II	Winter	Spring	Summer
I	September - October 9 weeks	November - December 6 weeks	February - March 9 weeks	April - May 6 weeks	December - January 4 weeks	May - June 4 weeks	December - January 3 weeks	Easter 1 week	June – August 10 weeks
II	September - October 9 weeks	November - December 6 weeks	February - March 7 weeks	March - May 8 weeks	December - January 4 weeks	May - June 4 weeks	December - January 3 weeks	Easter 1 week	June – August 10 weeks
III	September - October 9 weeks	November - December 6 weeks	January-February 5 weeks	March - May 10 weeks	December - January 4 weeks	March 1 weeks	December - January 2 weeks	Easter 1 week	
Total weeks	27 weeks	18 weeks	21 weeks	24 weeks	12 weeks	9 weeks	8 weeks	3 weeks	20 weeks

Figure 2. University calendar for dual program of study, ASEM

e) competency component:

The general objective of the study program 0413. BUSINESS AND ADMINISTRATION is to train economists in business and administration / managers or entrepreneurs, able to operate in a changing environment, oriented towards the successful initiation and management of business, as well as the management of an organization or subdivisions within it. Graduates of the study program 0413.1. BUSINESS AND ADMINISTRATION must acquire multiple skills and competencies in various functional areas of management, which will allow them to build their careers in the future, moving both vertically and horizontally of the organizational structure, working in various departments: sales, in marketing, in production, strategic planning service, etc.



At the same time, promoting entrepreneurship will encourage graduates to be entrepreneurial, find innovative solutions to societal problems and create products that add socio-economic value.

The inclusion of students in the business environment will facilitate the development of a wide range of important competencies for future specialists in this field. This will create favourable conditions for the development of specific professional skills, including the planning, organization, management and evaluation of activities. At the same time, general and transversal professional competencies will be developed.

f) personal component:

The cooperation between ASEM and the economic agents will be carried out at all stages of the realization of the dual higher education. Thus, the economic entity will be involved in the development of curricula in accordance with current and future needs; in the selection of potential students in the first year of studies and the training of professional skills in the real work environment; in ensuring the salary of students, during the entire training process; to involve students trained in dual format in solving real problems of the entity; to facilitate the employment of graduate students, who will carry out practical training in the partner company.

The company will delegate a person named tutor or mentor (a specialist), who will be responsible for training students and developing practical skills.

ASEM will conclude cooperation agreements with partner companies. Upon completion of the student selection process, companies will enter into training and learning arrangements during the course of study with students participating in the dual system.

In order to facilitate the cooperation with the economic agents, ASEM will prepare a methodological guide, which will describe the main aspects, related to the coordination of the students within the economic units.

g) technological component:

In the first year of testing the dual education within ASEM, the existing curriculum will be used for the study programs: Business and Administration (BA) and Applied Informatics (AI), which have passed the accreditation. In the future, it is possible to adjust the curriculum to the demands of the business environment and to the specifics of the study process in dual format.

This will require close cooperation with company representatives to take into account their needs for the training of future specialists in these fields. At the same time, teachers will be offered the opportunity to complete internships in partner companies.

h) infrastructure of organisations in the dual system of study:

At the institutional level, the monitoring of the study process in dual format will be performed by the Vice-Rector for teaching activity.

The departments of Management and Entrepreneurship, and Applied Informatics in Business, which were chosen to pilot the dual education programmes, will be responsible for ensuring the quality of the educational process carried out in dual format.

The respective departments will organize in-company training of students; individual student work; taking the exams according to the curriculum; directing the process of elaboration and defence of the annual and undergraduate theses of the students; informational and



methodical provision of the didactic process with didactic means (textbooks, course notes, methodical recommendations); and so on.

At the same time, will be delegated the persons responsible for the cooperation with the economic agents.

Likewise, university mentors will be assigned, who will guide the students during the years of study, remedying all the difficulties that may arise in this new form of study.

In order to inform ASEM teachers about the particularities of dual education, a methodological guide will be prepared, which will describe the main aspects related to the coordination of students studying in dual format.

i) selection procedure for students and companies in the dual higher education system:

Initially, the enrolment of students will be done in a similar way for all students, who will be informed when submitting the documents, that later they will have the opportunity to choose the mode of study: traditional or dual.

At the beginning of the study year (beginning of September) a meeting will be organized with all the students, who have been enrolled in BA and AI, where they will be explained what the studies in dual format consist of. Representatives of partner companies will also be invited to this meeting, who will present their offers and requirements to students.

In this way, those who wish to study dually will be required to submit a CV, a motivation letter and a list of companies where they would like to carry out in-company training. This portfolio will be sent to the economic agents, who will make the final choice.

Subsequently, an agreement will be signed between each student and the economic agent, which will describe the rights and obligations of each.

Students selected for dual study will be organized into a separate group, which will study according to a special program, outlined above.



P2-UTM/MD

Technical University of Moldova

Flexible and generic Dual Higher Education Model
(DHEM)

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**A2.1.3. DUAL HIGHER EDUCATION MODEL (DHEM)
(WP2/D2.1.)**

TECHNICAL UNIVERSITY OF MOLDOVA

Undergraduate study programs:

Robotics and Mechatronics

Automations and Information

MODEL DESCRIPTION

1. The scope of DHEM

The main scope of DHEM is to improve work capacity and individual development, to increase compatibility and continuity between the requirements of the business environment and the initial training of university students, to achieve a better high economic efficiency and social integration.

Dual higher education model aims to combine a course of higher education with business practice. The core of dual higher education model is based on two learning venues: higher education institution and enterprise.

The particular scope of DHEM related to students is to become actively involved in the decision-making processes within the enterprise as their practical experience grows. It is also the aim for them to be placed in a position from which they are able to develop and try out their own ways of solving problems during the course of the practical phases.

The dual form of study is essentially characterised by an increased practical orientation. Through the various activities within the enterprise, the students learn how to practically apply their theoretical knowledge and extend it. At the same time, their involvement in company processes enables them to become acquainted with their area of activity under real conditions. Students are introduced to their future activity and learn how to apply the theoretical knowledge, abilities and skills they have been taught during their studies within their professional work. At the same time, the students develop a professional identity by becoming familiar with their future career situation, the key working operations within their specialist field and the various aspects of in-company communication and decision-making processes. During the practice phases, the students are integrated into the working processes of the enterprise. By practically applying their theoretical knowledge, students learn how to assume responsibility for complex specialist activities as well as their abilities and skills.

The potential for a closer link between vocational training and academic education has been clearly seen in discussions with managers from industry and representatives of various industry organisations. In all their discussions, the enterprises and industry organisations have clearly outlined their desire for change towards a system of higher education incorporating specialist practical work and oriented towards the labour market.

The objectives of the model:

- a) Develop a flexible and generic DHEM that supports the different requirements and interests of employers, higher education institutions and students in different industrial and business sectors;
- b) the model must facilitate the familiarization of students with their future activity and learn how to apply the theoretical knowledge, abilities and skills they have been taught during their studies within their professional work;
- c) develop a professional identity for students by becoming familiar with their future career situation, the key working operations within their specialist field and the various aspects of in-company communication and decision-making processes;

- d) integrate students during the practice phases into the working processes of the enterprise to an increasing extent and acquire competencies within the areas of activity of their future occupation;
- e) assume students responsibility as their competency increases within the areas of their future field of activity. A prerequisite for this is the presence within the enterprise of pedagogically trained personnel who are proficient within their special subject and who can provide continuous instruction and supervision.

2. The structure of the model includes the following components:

- **integral motivation;**

TUM selected two undergraduate programs for the implementation of dual education:

Robotics and Mechatronics and ***Automatics and Informatics***.

The aim of the ***Robotics and Mechatronics*** study program is to train industrial and research engineers in the field of robotics and mechatronics, competitive in the national and international labour market, to stimulate creativity and innovation, to adapt to new labour market conditions, to develop the necessary skills in the form of knowledge and skills in four key areas of engineering: automation, computers, electronics and mechanics.

The undergraduate program ***Automatics and Informatics*** is part of the general field of studies Engineering and Engineering Activities and provides training and education of specialists in the field of Electronics and Automation, with the aim of providing an integrated set of knowledge, skills and abilities, necessary to develop of industrial equipment, control systems, communications and information systems for process management in different sectors of human activity.

The curriculum provides graduates with the ability to constructively and technologically design automation systems, robotic and mechatronic equipment and systems, to use, operate, or integrate them into flexible manufacturing systems, to program and operate integrated computer production systems, and to solve application and research problems specific to the field.

Both programs are the bachelor's degree programs in interdisciplinary science and technology, which integrates in a systematic conception such fields as Automation, Informatics, Electronics, Computers, Communications, Robotics, industrial, technological and manufacturing processes.

If in previous decades Robotics and Automatics was the prerogative of the top fields of industry (aerospace, aeronautics, military industry, car manufacturers, etc.), in the current period, based on advanced concepts and technical means provided by Robotics and Automatics, the most advanced process of technologies management in various fields of science, technology, industry and the national economy can be efficiently implemented: both conventional and renewable energy production and distribution; intensive agriculture; food industry; light industry; pharmaceutical, chemical industry; management of biotechnological processes, constructions, transport systems, roads, etc.

The selection of these two undergraduate programs was influenced by several factors:

- a) Continuous automation and robotization of technological and production processes in the Republic of Moldova based on the integration of engineering knowledge in the fields of: computer systems, networks and information technologies, power electronics, mechanical devices, etc. led to the need to train specialists which will acquire professional skills and abilities directly in the workspace of companies;

- b) Industrial enterprises in the Republic of Moldova, various institutions, companies, state or private organizations already have complex production systems, or automation systems that are based on the theoretical and practical concepts of the state of the art automatic, robotic and mechatronic systems. Thus, the internships at companies, the direct interaction with these equipments and the possibility to learn from professionals will allow the acquisition of the necessary competencies for the future engineers;
- c) The need to develop new methods and technologies for the design and production of automated, mini-, micro- and nano-robotic systems that have found very wide fields of application in technology, construction, medicine, etc. leads to the creation of favorable conditions for the development of dual education in the field of Automatics and Robotics.

- **organisation for a dual higher education course** (integrated model in existing programme or independent model);

TUM will follow an integrated model in existing programmes *Robotics and Mechatronics* and *Automatics and Informatics*, with the introduction of changes in the study process. According to the model approved at TUM after the discussions with representatives of the enterprises and industry organisations, students from these two programs, at the 2nd year of study will have the possibility to select a free choice discipline/activity- *In-company training* (120 hours), starting with 3rd year of study, they will have the opportunity to choose one of two ways to continue their studies: DHEM or classical one. The students will be reorganised in separate groups, which will study both traditional and dual way. It is important to mention that students from both forms of study will also have common disciplines that they will attend during 2 days of studies. Students who will choose the classic form of study will continue with the disciplines according to the curriculum, and students who will select DHEM will leave for 3 days at the company, where they will have the opportunity to receive practical vocational training or work experience.

- distribution of the training hours (theoretical and practical) in the university and at the dual partner economic agent (argumentation for this distribution):

	N. of weeks	Structure for the study in the university		Structure for the in-company training study		Total hours
		hours	%	hours	%	
1. Semester	15	900	100	0	0	900
2. Semester	15	900	100	0	0	900
3. Semester	15	900	100	120	11,76	1020
4. Semester	15	900	100	120	11,76	1020
5. Semester	15	300	33,3	600	66,7	900
6. Semester	15	355	39,4	545	51,6	900
7. Semester	15	310	34,4	590	65,6	900
8. Semester	15	100	11,1	800	88,9	900
Total		4665	62,7	2775	37,3	7680

The distribution of the disciplines by semesters and years of studies for the *Robotics and Mechatronics* and *Automatics and Informatics* study programs are presented in Annex 1 and 2 respectively.

- **form of in-company training for students** (weekly, monthly, modular);

The distribution of study hours will be organised according to a mix model. At the 2nd year of study students will have the possibility to select a free choice discipline/activity- *In-company training* (120 hours) during 4 weeks/ 3hours per day during the both semesters. This activity will be carried out in parallel with traditional studies.

Students, starting with the 5th semester will be involved into a weekly model. They will spend 2 days at the university, studying the subjects in the curriculum and 3 days will have an internship at the company, accumulating competences and practical skills. The disciplines from the university will be taken in the form of a classic exam, the knowledge acquired at the company will be evaluated in the form of a report presentation in front of a commission composed of professors from the university and company representatives.

The University calendar for DHEM at TUM is presented in the Table below:

Year of study	Didactic activities				Exam sessions		Internships	Holidays		
	Sem. I 15 weeks		Sem. II 15 weeks		Sem. I 4 weeks	Sem. II 4 weeks		Winter	Spring	Summer
	University studies	Studii la companie	University studies	Studii la companie						
I	1.09 - 14.12 (15 weeks)	0 weeks	26.01-17.05 (15 weeks)	0 weeks	15.12 – 25.01 (4 weeks)	18.05 – 14.06 (4 weeks)	-	25.12 – 07.01 (2 weeks)	Easter holidays, (according to the Orthodox Christian calendar)	15.06 – 30.08 (11 weeks)
II	1.09 - 14.12 (15 weeks)	1.09 - 14.12 (4 weeks, 3 hours a day)	26.01-17.05 (15 weeks)	26.01-17.05 (4 weeks, 3 hours a day)	15.12 – 25.01 (4 weeks)	18.05 – 14.06 (4 weeks)	-	25.12 – 07.01 (2 weeks)		15.06 – 30.08 (11 weeks)
III	1.09 - 14.12 (15 weeks, 2 days a week)	1.09 - 14.12 (15 weeks, 3 days a week)	26.01-17.05 (15 weeks, 2 days a week)	26.01-17.05 (15 weeks, 3 days a week)	15.12 – 25.01 (4 weeks)	18.05 – 14.06 (4 weeks)	01.09-18.12 (4 weeks)	25.12 – 07.01 (2 weeks)		15.06 – 30.08 (11 weeks)
IV	1.09 - 14.12 (15 weeks, 2 days a week)	1.09 - 14.12 (15 weeks, 3 days a week)	23.02 – 17.05 (1 săptămână)	23.02 – 17.05 (14 weeks)	15.12 – 25.01 (4 weeks)	3.03 – 29.03 (1 week) 01.06-14.06 (2 weeks)	01.09-18.12 (4 weeks) 06.01 – 22.02 (4 weeks)	25.12 – 07.01 (2 weeks)		-
Total	60 weeks	60 weeks	46 weeks	59 weeks	16 weeks	15 weeks	12 weeks	8 weeks	1 week	33 weeks

- **competency component** (what competencies and skills will be developed on the in-company training);

The undergraduate program **Robotics and Mechatronics** train industrial and research engineers in the field of robotics and mechatronics, competitive in the national and international labour market. The goal of the program is to to develop the necessary skills in the form of knowledge and abilities in four key areas of engineering: automation, computers, electronics and mechanics.

The undergraduate program *Automatics and Informatics* provides training and education of specialists in the field of Electronics and Automation, with the aim of providing an integrated set of knowledge, skills and abilities, necessary to develop of industrial equipment, control systems, communications and information systems for process management in different sectors of human activity.

Both programs have the goal to develop the following competencies and skills on the in-company training:

Professional competences and skills:

- Applying the basic knowledge of general and specialized technical culture to solve technical problems specific to the field of Robotics and Automatics;
- Development, modernization and use of diagrams, structural and operating diagrams, graphical representations and technical documents specific to the field of Robotics and Automatics;
- Realization of Hardware and Software applications in the field of Robotics and Automatics as well as development environments specific to the field;
- Design, implementation and operation of industrial robots, complex robotic systems, transmission and transfer systems, and related systems used in robotic applications;
- Application of methods and techniques of modelling and simulation, virtual instrumentation and environments for the development of robotic applications, programming and individual control of industrial robots, mobile and microrobots using elements of artificial intelligence;
- Design, implementation, testing, use and maintenance of systems with general and dedicated equipment, including computer networks for automation and applied computing applications;
- Development of applications and implementation of algorithms and structures of automatic management, using principles of project management, programming environments and technologies based on microcontrollers, signal processors, programmable automata, embedded systems.

Transversal competences and skills:

- Honourable, responsible, ethical behaviour, in the spirit of the law to ensure the fulfilment of professional tasks.
- Ability to work in a team, identifying individual and common roles and responsibilities, making decisions and assigning tasks, with the application of effective relationship techniques and teamwork;
- Spirit of initiative and action for professional and personal development, through continuous training using sources of documentation in Romanian and in the languages of international circulation.
- Applying knowledge of legislation, economics, marketing, business and quality assurance in economic and managerial context;
- Applying, in the context of compliance with the law, intellectual property rights (including technology transfer), product certification methodology, principles, rules and values of the code of professional ethics in its own strategy of rigorous, efficient and responsible work.
- Intercultural sensitivity, openness, flexibility, self-assuredness;
- Respectful behaviour and openness;
- An increase in communicative competence;
- Empathy as a predictor of reduced cultural shock;
- Improvement of self-assuredness, flexible handling of new situations;

- Language skill as a predictor of effectiveness, verbal and non-verbal competence;
- Motivation and intercultural knowledge;
- Communication skills and intercultural self-confidence;
- Significant for appropriateness of assessment;

- **personal component** (the resources involved from the companies: the way of training, the collaboration with the academic environment);

The collaboration between TUM and the companies will be carried out at all stages of the realization of the dual higher education. Thus, the representatives of the economic agents will be involved in the development of curricula according to the needs of the labour market; in the selection of potential students in the second year of study and the training of professional skills in the real work environment; in ensuring the salary of students during the entire training process. The company will delegate a tutor, who will be responsible for training students and developing practical skills. The tutor will be responsible for supervision, progress of studies, training plan, realised projects, issuing of assignments to the students, examination of the practice reports by the students, drafting of the competency profile for the students in the company. Also, the company will be responsible for student's involvement in solving real problems; facilitating the employment of graduate students, who will carry out practical training in the partner company.

Company representatives will participate in the in-company trainings report examination commissions at TUM.

TUM will conclude cooperation agreements between university and enterprises, The contract between students and enterprises will be signed.

- **technological component** (connection of educational programs, curriculum with the institutions of HE, enterprises, etc.);

In the first year of testing the dual education within TUM, the existing curriculum will be used for the study programs: *Robotics and Mechatronics* and *Automatics and Informatics*, which have passed the accreditation. In the future, the curriculum will be adjusted to the demands of the labour market and to the specifics of the study process in dual format. This will require close cooperation with company representatives to take into account their needs for the training of future specialists in these fields. At the same time, teachers will be offered the opportunity to complete internships in partner companies.

- **infrastructure of organisations in the dual system of study** (all the facilities of an institutional nature that guarantee the functioning of a dual course of study: management, coordination and study supervision);

At the institutional level, the monitoring of the study process in dual format will be performed by the Vice-Rector for teaching activity. The departments of *Computer Science and Systems Engineer* and *Software Engineer and Automatics*, which were chosen to pilot the dual education programmes, will be responsible for ensuring the quality of the educational process carried out in dual format.

These departments will organize in - company training of students; individual student work; taking the exams according to the curriculum; directing the process of elaboration and defending annual

and bachelor's theses, providing methodical and didactic materials (methodological guides, course materials, guides for laboratory work, internships, passing the bachelor's exams, etc.);

The departments mentioned above will be responsible to delegate the person who will coordinate the dual education and will collaborate with the tutor from the company.

The essential functions of tutors and person responsible from the university are:

- to visualize the learning process in the two places and to identify where the knowledge, skills and competencies envisaged in the curriculum can be acquired. This involves visualizing in conjunction with the student the learning situations in the work process, the phases of assimilation and use in practice of what has been learned;
- to observe and analyse the student's learning progress. The aim is to stimulate the student to reflect on their learning and to be willing to share these reflections;
- taking measures to reinforce learning and to correct failures in the process together with the academic responsible person;
- the communication with both, the student and the co-workers in the company, who are important transmitters of knowledge, skills and competences in the work process, the academic responsible person and those in charge of companies.

- **selection procedure for students and companies in the dual higher education system**

At the first step, the enrolment of students will be done in a similar way for all students, who will be informed when submitting the documents, that later they will have the opportunity to choose the mode of study: traditional or dual.

At the beginning of the first study year a meeting will be organized with all the students, who have been enrolled at *Robotics and Mechatronics* and *Automatics and Informatics* study programs, where they will be explained what the studies in dual format consist of.

At the end of the first study year a second meeting will be organized. Representatives of partner companies will also be invited to this meeting. They will present their offers and requirements to students. In this way, those who wish to study dually will be required to submit a CV, a motivation letter and a list of companies where they would like to carry out in-company training. This documents will be sent to the economic agents, who will make the final choice. Subsequently, an agreement will be signed between each student and the economic agent, which will describe the rights and obligations of each. Students selected for dual study will learn in a traditional mode two years, but at the second year they will choose free choice discipline/activity- *In-company training* (120 hours) during 4 weeks/ 3hours per day during the 3rd and 4th semesters. Start with the 3rd year of study they will be organized into a separate group, which will study according to a special program, outlined above.



P3-ULIM/MD

Free International University of Moldova

Flexible and generic Dual Higher Education Model
(DHEM)

Project Acronym:	COOPERA
Project full title:	INTEGRATING DUAL HIGHER EDUCATION IN MOLDOVA AND UKRAINE
Project No:	617490-EPP-1-2020-1-MD-EPPKA2-CBHE-SP
WP / Deliverable/ Action:	WP2 / D2.1/ A2.1.3 Dual Higher Education Model (DHEM)
Project partner (s):	P3-ULIM/MD
Place/ Date:	Chisinau, Moldova

A2.1.3. DUAL HIGHER EDUCATION MODEL (DHEM)

WP2/D2.1. Free International University of Moldova

1. The scope of DHEM

Dual training model in higher education appears as a novelty for the educational system of the Republic of Moldova. Dual education is a win-win model of collaboration between university and companies, involving three active parts/actors that plenty benefit from the dual training: the student, the company and university. The receiving companies can recruit future employees trained according to their specific profiles, higher education institutions are able to modernize their curriculum in collaboration with their training partners and use the companies' expertise and equipment to offer high-level training to their students. Students also benefit from dual programs - they gain work experience alongside their training, earn a salary and have a good chance of being offered a job at their training company upon graduation.

Dual study program is an excellent opportunity for students who are looking to integrate practical elements into their academic studies. Students of dual study programs are enrolled at a higher education institution, being at the same time employed by a company that has a cooperation contract with the university. The dual education students study in the institutional academic period together with the regular full-time students at their higher education institute, and parallel to their academic education they participate in the practical training. It allows for greater specialization, letting students focus particularly on the aspects that are most closely related to the job they want to pursue after graduation and allowing them to gain the exact needed skills for it.

2. The objectives of the model: (3-4 objectives)

- Involving students and employers of a dual education system in a lifelong learning process;
- Balancing education (in the educational institution) and training (at the enterprise level) in order to ensure the appropriate level of qualification, to teach and socialize the next/young generation.
- Increasing motivation to study of young generations;
- Improving the competencies of higher education graduates, according to the needs of employers / labor market and thus improving the employability of graduates;
- Increasing the relevance of higher education.

3. The structure of the model includes the following components:

- **integral motivation (the arguments why the chosen study program corresponds to DHE):**

The decision on piloting as dual an existing accredited master program in *Diplomacy, Security, Business and Communication* was based on several reasons:

- there is a need in a closer and intensive connection between university and companies in these fields of study in order to redefine and update university curricula to better respond to labor market requirements;
- students studying in these fields need more in-company training to develop more social and professional skills;

- **organisation for a dual higher education course (integrated model in existing programme or independent model):**

ULIM will follow an integrated model in the existing accredited master program in *Diplomacy, Security, Business and Communication*. The integrated model will make it possible to facilitate certain advantages: it is not necessary to develop a completely new curriculum and to attract a new academic staff, and it is possible to organize lectures in larger groups. At the same time, it will be necessary to draw more attention to the integration of the in-company training period in the educational process, without affecting the quality of the teaching and learning activities at the university. Students who will choose the dual education will continue their studies according to the curriculum, but will spend more time at the company, where they will have the opportunity to receive practical vocational training and work experience.

- **distribution of the training hours (theoretical and practical) in the university and at the dual partner economic agent (argumentation for this distribution):**

The following table shows the distribution of the number of theoretical and practical hours in the framework of the Master program, 58,4 % of which being planned to be spent at ULIM and 41,6% - at the company.

Semester	N. of weeks	Structure for the study in the university		Structure for the in-company training study		total	
		hours	%	hours	%	hours	%
1 st Semester	15	600	66,7	300	33,3	900	100
2 nd Semester	15	600	66,7	300	33,3	900	100
3 rd Semester	15	600	66,7	300	33,3	900	100
4 th Semester	15	300	33,3	600	66,7	900	100
Total	60	2100	58,4	1500	41,6	3600	100

According to the plan, all lectures and seminars will be held on the university campus and taught by tenured professors and experts. Individual hours will be divided between the university and the company, as is reflected in the following table, presenting the distribution of hours in the 1st semester:

Title of the course/module	Total number of hours			Number of hours by types of activities				Evaluation form	Nr. of credits
	Total	Direct contact	Individual study	L	S	Individual work			
						Univer sity	Company		
<i>Globalization and National Security</i>	150	40	110	20	20	60	50	Exam	5
<i>Business and Global Governance</i>	150	40	110	20	20	60	50	Exam	5
<i>Religion, Diplomacy and Security</i>	150	30	120	20	10	70	50	Exam	5
<i>Methodology and ethics of research in Political Science</i>	150	40	110	20	20	60	50	Exam	5
<i>Diplomacy and Foreign Policy</i>	150	30	120	20	10	70	50	Exam	5
<i>Economic Diplomacy</i>	150	30	120	20	10	70	50	Exam	5
Total 1st semester	900	210	690	120	90	390	300	6	30

- **form of in-company training for students (weekly, monthly, modular);**

The distribution of the study / theoretical and practical hours between the university and company will be organized according to a mixed model, combining both daily work hours/weekly and monthly. In the 1st year of study, students will carry out learning activities (contact hours) at the university, while spending, in parallel, 3 hours per day / 9 weeks per semester at the company. In the 2nd year of study, the 3rd semester will be divided into two parts, the first one (10 weeks) including lectures and seminars at the university and the last one, including the internship (5 weeks) - at the company. As of the 4th semester, students will work mostly at the company (14 weeks, February-April) and only one week (in May) at the university.

The following table reflect the University calendar (I weeks):

Year of study	Study Activities (Including internship)				Examination Sessions		Holidays		
	1 st Semester		2 st Semester		1 st Sem.	2 nd Sem.	Winter	Spring	Summer
	Study /University	Training study / Company	Study /University	Training study / Company					
1st Year	September – December 15 weeks	November – December 3 hours/day 9 weeks	February – May 15 weeks	March – May 3 hours/day 9 weeks	January 3 weeks	June 3 weeks	25.12-08.01 2 weeks	Easter 1 week	July - August
2nd Year	September – November 10 weeks	November - December 5 weeks	May 1 weeks	February – April 14 weeks	January 3 weeks	June 3 weeks	25.12-08.01 2 weeks	Easter 1 week	-
TOTAL weeks	25 weeks	14 weeks	16 weeks	23 weeks	6 weeks	6 weeks	4 weeks	2 weeks	9 weeks

- **competency component (what competencies and skills will be developed on the in-company training):**

The main objective of the master program in *Diplomacy, Security, Business and Communication* is to train specialists capable of understanding and managing areas such as foreign and security policy, combined with elements of international business and communication, giving students the opportunity to practice in one of the sectors related to the complex fields of international relations and / or international business. At the same time the study program aims at helping students to increase professional and social skills, including interpersonal communication, flexibility, and emotional intelligence, and also abilities to engage in critical thinking and problem-solving and work in interdisciplinary, cross-functional teams.

The program provides support to students in order to implement projects and test their concepts, and to develop competence in action so that they can meet current and future professional challenges. It focuses on deepening knowledge of the work and strengthening the employability of students in a model that will potentially serve as a model to the higher education community more generally.

- **personal component (the resources involved from the companies: the way of training, the collaboration with the academic environment):**

ULIM will conclude partnership and cooperation agreements with partner companies concerning the training of students. At the same time contracts between students and company will be signed.

The collaboration between ULIM and the company will be carried out at all stages of the realization of the dual higher education. Representatives of the company will be involved in the curriculum development process, so that the university curricula correspond to labor market needs. They will be invited to participate in the selection of potential students in the 1st year of study and the training of professional skills in the real work environment; in ensuring the salary of students during the entire training process. The company will be responsible for student's involvement in solving real problems; facilitating the employment of graduate students, who will carry out practical training in the partner company.

The company will delegate a tutor, who will be responsible for training students and guiding them in developing practical skills. The tutor will be responsible for supervision, progress of studies, training plan, realized projects, issuing of assignments to the students, examination of the practice reports by the students, drafting of the competency profile for the students in the company.

- **technological component (connection of educational programs, curriculum with the institutions of HE, enterprises, etc.):**

In the 1st year of testing the dual education within ULIM, the existing curriculum will be used for the accredited master program in *Diplomacy, Security, Business and Communication*. In the future, the curriculum could be adjusted to the demands of the labor market and to the specifics of the study process in dual format. This will require an enhanced cooperation with the company, so that the company representatives take into account their needs for the training of future specialists in the field. At the same time, academic staff will be offered the opportunity to complete internships in partner companies.

- **infrastructure of organizations in the dual system of study (all the facilities of an institutional nature that guarantee the functioning of a dual course of study: management, coordination and study supervision):**

At the institutional level, the Vice-Rector for Academic Strategy and Study Programs will monitor the study process in the dual education.

The department of International Relations, Political Science and Journalism, that will pilot the dual education program, will be responsible for ensuring the quality of the educational process carried out in dual format. The department is responsible for directing the learning process and in-company training; monitoring students' individual work; organizing exams according to the curriculum; guiding students in elaboration and defending their theses; providing them all necessary support and learning materials (course materials, guides for internships etc.).

The department will delegate one person to coordinate the dual education and to collaborate with the tutor from the company.

- **selection procedure for students and companies in the dual higher education system (how and when the selection process for students and companies will take place):**

The enrolment of students will be done in a similar way for all students, who will be informed (when submitting the documents) that at the beginning of the academic year they will have the opportunity to choose between traditional and dual education.

At the beginning of the first study year there will be organized a meeting with all the students enrolled in the master program in *Diplomacy, Security, Business and Communication*, where they will be explained what the dual education means. Representatives of partner companies will also

be invited to this meeting. They will present their offers and requirements to students. Thus, students who will wish to study dually will be required to submit a CV, a motivation letter and a list of companies where they would like to carry out in-company training. These documents will be sent to companies that will do the selection. Subsequently, an agreement (describing rights and obligations of each part) will be signed between each student and the company. Students selected for dual study will learn in a traditional mode, but will spend more time in company, according to the curricula.



P5-UzhNU/UA

State Univeraity "Uzhhorod National
University /Ukraine

Flexible and generic Dual Higher Education Model
(DHEM)

Project Acronym:	COOPERA
Project full title:	INTEGRATING DUAL HIGHER EDUCATION IN MOLDOVA AND UKRAINE
Project No:	617490-EPP-1-2020-1-MD-EPPKA2-CBHE-SP
WP / Deliverable/ Action:	WP2 / D2.1/ A2.1.3 Dual Higher Education Model (DHEM)
Project partner (s):	P5-UzhNU/UA
Place/ Date:	Uzhhorod, Ukraine



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A2.1.3. Dual Higher Education Model (DHEM) of the P5. Uzhhorod National University

Educational and professional program "International Commerce" of the Second (Master's) level of higher education training in the specialty 076 Entrepreneurship and trade field of knowledge 07 Management and administration

1. The scope of application of the dual higher education model

The dual form of higher education is a method of obtaining education that involves a combination of training in educational institutions and other subjects of educational activity with training at workplaces in enterprises, institutions and organizations to acquire a certain qualification. It's considered that in higher education, the dual form is one of the ways of obtaining education for full-time students.

The dual form of education implements a student-centered approach by focusing on meeting the expectations of education seekers regarding successful work in their profession and is aimed at forming in them modern practical knowledge, skills and abilities of professional activity and teamwork at real workplaces, increasing readiness, facilitating and speeding up the transition of graduates from the field of education to the labor field, as well as increasing their overall competitiveness on the labor market.

The implementation of a dual form of education on the "International Commerce" requires the updating of existing educational programs, the careful selection of teachers who implement the program, the formation of the readiness of specialists to transfer their experience and skills.

The learning process includes the stages of theoretical training, practical training, measures to control the knowledge, skills and abilities of students, final certification of students in cooperation with representatives of enterprises.

2. The objectives of the model

The model gains the following objectives:



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- improving the quality of specialist training in accordance with the real requirements of the labor market and providing the national economy with qualified specialists;
- strengthening the role of employers and professional associations in the system of training qualified personnel from the formation of the content of educational programs to the evaluation of training results;
- increasing the competitiveness of University graduates in the conditions of globalization and promoting the growth of youth employment;
- shortening the period of adaptation of graduates to professional activity;
- increasing the motivation of education seekers to study.

3. The structure of the model includes the following components:

3.1. Integral motivation (the arguments why the chosen educational and professional program "International Commerce" of the Second (Master's) level of higher education training corresponds to DHE):

1) Special education in the field of International Commerce, which determines the guarantee of employment and the possibility of further education and career growth. The dual form of the program will help to prepare students and graduates in the in a competitive manner to carry out their professional duties in accordance with the acquired knowledge and skills;

2) Training of highly qualified specialists who, having knowledge of economic processes and patterns of functioning of the world commodity market, are able to carry out economic diagnostics of enterprises and organizations, analyze and evaluate their entrepreneurial and innovative potential, can engage in brokerage, information-analytical, advisory, expert activities for solving tasks and problems of international trade, regulation of international economic relations in the sphere of global economic processes and activities of subjects of the international economy, as well as EU markets: in Ukraine due to the challenges of war, there is a constant need for specialists who would perform organizational functions in this field;

3) Key competitive competencies of the educational program are: create and implement development strategy of trade sectors (partners, infrastructure), ability to evaluate goods and service, ability to solve problems and make management decisions in international commerce, ability to initiate and implement innovative projects (ability to solve problems and drive management decisions in international activities), ability to determine future trends in international trade on the world



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market and predict their impact on the commercial activities of enterprises (to identify future global trends and predict their impact on the commercial activities of enterprises). All of them allow students and graduates of DHE program to position as highly qualified, competitive specialists in the field of international commerce and provide specialized conceptual knowledge and skills for the successful performance of professional tasks, independent conduct of scientific research and the development of substantiated proposals for solving problems and improving the efficiency of activities in this area as the dual form will contribute to a more efficient allocation of time for theoretical study and practice;

4) The program ensures that students acquire professional knowledge, skills and abilities to successfully carry out professional activities in the field of international commerce, taking into account the unique border situation of Transcarpathia (the region borders on 4 EU countries), the functioning of foreign enterprises and corporations in the region and the growing demand for specialists in international commerce on the labor market. Due to the presence of dual practical malt, a wide list of optional disciplines and the opportunity to participate in industrial activities, internships, academic mobility programs, applicants can form their own learning trajectory, which will provide special competencies for successful implementation of professional activity in this field. all the listed competitive advantages are extremely important in the conditions of the war in the region, which has become a rear strategically economically important region for the country, with opportunities to attract and develop relocated business and industry enterprises.

3.2. Organization for a dual higher education course (*integrated model in existing program or independent model*):

The proposed program provides an integrated model of a dual form of education based on the existing educational professional program "International Commerce" of the Second (Master's) level of training specialty 076 Entrepreneurship and trade field of knowledge". Appropriate redistribution of time is foreseen, taking into account the increase in the share of practical-oriented training at enterprises, institutions, and organizations.

The pilot model of the educational program in the dual form will provide division of the total training time into periods of training that take place in the educational institution and at the workplace, which may include the approach of ***combining model***, which is provided for by the approved Regulation, in particular:



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- several hours during the day of training take place in the educational institution, the rest - at the employer's workplace (*split-day model*);
- several days during the week, training takes place in an educational institution, the rest of the days of the week - at the workplace (*split week model*);
- alternating periods of study at the educational institution and at the employer, when one period involves one or more weeks, months, semester (*block model*).

Based on the curriculum for the dual form, an individual curriculum of the student will be drawn up.

3.3. Distribution of the training hours (theoretical and practical) in the university and at the dual partner economic agent (argumentation for this distribution):

Detailed distribution structure of the Program educational and professional program "International Commerce" of the Second (Master's) level of training specialty 076 Entrepreneurship and trade field of knowledge 07 Management and administration:



#	Disciplines	Total hours	ECTS	Lectures	Practical training	Individual work	Self-study	Form of final control
<i>1st year educational load</i>								
Normative academic disciplines								
1	Modern trends of the global and national economy	120	4	24	20		76	exam
2	Social responsibility and corporate culture	90	3	20	16		54	exam
3	Innovative development of the economy	90	3	20	16		54	exam
4	Regulation of disputes in international commerce	120	4	20	16	30	54	exam
5	Management of transnational corporations	150	5	32	28		90	exam
6	Risks in international commerce	120	4	20	16	30	84	exam
7	Methodology of scientific research on international commerce	120	4	12	32		76	test
8	International trade	90	3	20	16		54	test
9	Supply chain management	90	3	20	16		54	exam
10	Scientific organization of entrepreneurship, trade and exchange activity	120	4	24	20		76	exam
	Total:	1110	37	212	196	60	672	
Optional academic disciplines								
1	Business ethics	120	4	22	20		78	test
2	Entrepreneurship	120	4	22	20		78	test
3	Electronic commerce	120	4	22	20		78	test
4	Calculations in international commercial activity	120	4	22	20		78	test
5	Management of international projects	120	4	22	20		78	test
6	International finance	90	3	20	16		54	test
	Total:	690	20	130	116		444	



#	Disciplines	Total hours	ECTS	Lectures	Practical training	Individual work	Self-study	Form of final control
2nd year educational load								
Normative academic disciplines								
1	Logistics in international trade	5	6,5	30	28		137	exam
2	Foreign economic activity and customs affairs	5	4	20	16		84	exam
3	Goods and services examination	4,5	4	20	16		84	exam
4	International trade	7	4	24	20	30	76	exam
	Total:	21,5	18,5	94	80	30	381	
Enterprise internship								
1	Enterprise internship		6					
2	Attestation		1,5					

Normative academic disciplines – 55,5 ECTS (Supply chain management – 3 ECTS, Logistics in international trade – 6,5 ECTS, Foreign economic activity and customs affairs – 4 ECTS: 13,5 ECTS - DHE practical part of the program)

Optional academic disciplines – 20 ECTS (DHE practical part of the program)

Enterprise internship – 6 ECTS (DHE practical part of the program)

Attestation – 1,5 ECTS

Total program credits: 83 ECTS

DHE practical part of the program: 41 ECTS – 34,03%



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3.4. Form of in-company training for students (weekly, monthly, modular)

The 1st year of Master's program studies within normative academic disciplines are provided on the basis of the university which obtain 55,5 ECTS, 13,5 ECTS within normative academic disciplines - DHE practical part of the program (Supply chain management – 3 ECTS, Logistics in international trade – 6,5 ECTS, Foreign economic activity and customs affairs – 4 ECTS).

Other DHE practical part of the program (includes study days at partner enterprises of the sector) within optional academic disciplines which obtain 20 ECTS.

Such approach allows to implement the *combining model* of DHE Master's program: several hours during the day of training take place in the educational institution, the rest - at the employer's workplace (elements of *split-day model*); several days during the week, training takes place in an educational institution, the rest of the days of the week - at the workplace (elements of *split week model*).

During the academic year the university should facilitate regular meetings of students with representatives of business, state authorities, non-governmental public organizations, etc.

In the 2nd year of Master's program enterprise internship which obtain 6 ECTS is fully the DHE practical part of the program at partner enterprises of the sector: in this way the alternating periods of study at the educational institution and at the employer, when one period involves one or more weeks, months (elements of *block model* are required).

Attestation of the students-graduates by the end of the 2nd year of Master's program (1,5 ECTS) involves the participation of employers' representatives of partner companies as an element of assessing their knowledge, skills and competencies within the framework of the dual program.

3.5. Competency component (*what competencies and skills will be developed on the in-company training*)

The main task of in-company training is obtaining the ability to identify and solve problems related to international trade, solve complex problems in the field of international trade, generate innovative business ideas and apply modern information and analytical tools for managing business activities of entrepreneurial, trade and stock exchange structures in international environment and in the learning process that involves conducting research under uncertain conditions and requirements.



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Competences that must be acquired during training are divided into general and special:

General Competences (GC):

- ability to adapt and act in a new situation (**GC -1**);
- the ability to identify, pose and solve problems (**GC -2**);
- the ability to motivate people and move towards a common goal (**GC -3**);
- the ability to communicate with representatives of other professional groups of different levels (with experts from other fields of knowledge/types of economic activity), including with foreign representatives (**GC -4**);
- determination and perseverance regarding the assigned tasks and assumed responsibilities (**GC -5**);
- ability to generate new ideas, initiative and entrepreneurial spirit (**GC -6**);
- the ability to evaluate the effectiveness of innovative investment projects and programs of the enterprise (**GC -7**);
- the ability to self-educate, constantly improve qualifications in the field of entrepreneurship and trade (**GC -8**);
- the ability in the process of learning and independent preparation to find, process and analyze information from various sources and use information and communication technologies (**GC -9**).

Special Competences (professional, subject competences) (SC):

- the ability to develop and implement a strategy for the development of business, trade and/or stock exchange structures (**SC -1**);
- the ability to evaluate products, goods and services in business, trade and/or stock exchange activities (**SC -2**);
- the ability to effectively manage the activities of business entities in the field of entrepreneurship, trade and/or stock exchange activity (**SC -3**);
- the ability to solve problematic issues and make management decisions in international commerce (**SC -4**);
- the ability to initiate and implement innovative projects in international activities (**SC -5**);
- the ability to detect trends in changes in the external environment and predict their development (**SC -6**);
- the ability to obtain quality information from various data sources (**SC -7**);
- the ability to create conditions for identification of goods, using electronic reference information on their origin, composition, method of production, conditions of use, etc. (**SC -8**);
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- the ability to determine future trends in international trade on the world market and predict their impact on the commercial activity of enterprises (SC -9);
- the ability to generalize and design the results of experimental and empirical research, data analysis and interpretation (SC -10);
- the ability to investigate the dynamics of changes in the market situation and generalize the development of situations (SC -11)
- the ability to find, analyze and work with information, including in global computer networks, and to be able to build a communication network for information exchange (SC -12);
- the ability to apply advanced forms and methods of organizing trade interaction between subjects of international relations, to make international calculations taking into account risks, market conditions, in the conditions of a global competitive environment (SC -13);
- the ability to assess the competitive industry environment of the enterprise (SC -14) the ability to identify and evaluate the role of factors of global development, as well as their impact on conducting international business (SC -15);
- the ability to create a system of communications for promotion goods and services on the world market and develop a strategy for the company's sales activities (SC -16);
- the ability to form and implement a logistics mission - strategies, goals, tasks, solutions and to carry out complex management activities in supply chains; be able to determine ways to save total costs, including material, financial, and labor resources throughout the entire logistics chain and evaluate its effectiveness (SC -17).

3.6. Personal component (*the resources involved from the companies: the way of training, the collaboration with the academic environment*)

As part of the Program preparation and piloting, the representatives of the project working group studied the interests and comments of the academic community (consultations, working meetings with academics, administration staff and management representatives, discussions of current problems during university-wide events, etc.).

Best practices and methodological approach of partner EU universities from project activities and study visits and other components were included in the program, particularly such as intensifying the exchange of best practices, dissemination activities by participation in conferences and round tables, trainings



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and events dedicated to problems of academic integrity, participation in international projects, building scientific potential, establishing inter-institutional cooperations, etc.

On the basis of Faculty of Economics of UzhNU, meetings with employers and partner companies on urgent issues of their development and opportunities of cooperation are regularly held. It should be noted that the Faculty of Economics of UzhNU is also a basic institution for the development of Regional Development Strategy of the Transcarpathian region and on the municipal level – the Socio-Economical strategy of Uzhhorod city as the region's main administrative and educational-scientific center.

The Career Center of UzhNU systematically conducts educational trainings and meetings on the development of professional opportunities and career competencies, skills and knowledge for the further successful professional advancement of students and graduates of the university in accordance with the current requirements of the labor market and employers, taking into account European standards and the framework of qualifications. With organizational and informational support and on a contractual basis, the Career Center of UzhNU cooperates with the Regional and City Employment Service, The Employers' Federation, The Department of Education and Science, Youth and Sports, The Department of Economy and Trade of Regional Administration in order to ensure the most current requirements of the labor market and employers, to develop effective mechanisms and strategies for training specialists for implementation in the region.

That's are main options for the socio-economic analysis, current labor market trends and challenges studies in the process of preparation and piloting of DHE program in the UzhNU. Similar studies were conducted within the framework of projects on the development of a smart specialization strategy for the Transcarpathian region.

The Faculty of Economics of UzhNU and Career Center of UzhNU actively cooperates with the public and research organizations – Regional Development Agencies, Transcarpathian regional center of socio-economic and humanitarian studies of the National Academy of Sciences of Ukraine, an expert platform of the CSR Ukraine Development Center - Career Hub, international institutions, etc.



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3.7. Technological component (*connection of educational programs, curriculum with the institutions of HE, enterprises, etc.*)

In order to ensure compliance of the Program with the requests of employers and to take into account their proposals and interests, during the piloting design of the educational professional program, a number of consultations and working meetings are planned with representatives of institutions and organizations that are main stakeholders and drivers of the reform of the modern economic system (state and local self-government bodies, public organizations, scientific and educational institutions, private business).

For the implementation of the pilot model of the educational program in the dual form, the educational institution is developing: a separate curriculum that covers the entire period of implementation of the educational and professional program and must meet the requirements for ensuring the duration of practical training provided for the dual form of education; the schedule of the educational process, which provides for alternating periods of study at the educational institution and at the workplace; appropriate methodical provision of educational components.

Students of DHE program will be fully provided with all necessary educational facilities, computer workstations, and multimedia equipment that meets their needs (student-centered learning, self-learning, practical problem-oriented learning, individual creative approach; forms of organization of the educational process: lectures, seminar classes, preparation of course projects, industrial practice, internship; educational technologies: multi-media learning tools, computer classes, online learning system "Moodle", etc.). Modern information and communication technologies used to train students of higher education, thanks to which they have the opportunity to raise their professional level, engage in scientific research.

The study of model of dual program in higher education capable of ensuring the training of competitive qualified specialists in modern challenges of the economy, taking into account the needs and requirements of employers, the stage of developing methodological approaches for their introduction into the educational process is aiming to be implemented.

3.8. Infrastructure of organisations in the dual system of study (*all the facilities of an institutional nature that guarantee the functioning of a dual course of study: management, coordination and study supervision*)



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According to the Ministry of Education and Science of Ukraine regarding the implementation of the provisions of the Regulation on the Dual Form of Obtaining Vocational Pre-University and Higher Education (Order of the Ministry of Education and Science of Ukraine dated April 13, 2023 No. 426 was registered by the Ministry of Justice of Ukraine), the dual form of obtaining higher education at the Uzhhorod National University (UzhNU) is introduced according to educational programs by decision of the Academic Council. After making a decision on the implementation of a dual form of education, the educational institution adopts relevant internal documents, appoints a person (persons) who will perform the duties of the coordinator from the educational institution, creates (if necessary) relevant structural subdivisions.

The educational institution, if necessary, provides timely methodical assistance in the organization of training at workplaces to employer representatives involved in the organization of a dual form of education. In order to ensure the proper quality of the training of dual-educators, the educational institution must hold regular meetings with employers (at least once a year) and organize feedback from the education seekers, with the participation of a person performing the duties of a curator, about the appropriateness of the training results at workplaces to the goals and requirements of the educational program.

The educational institution provides the opportunity to conduct a joint evaluation of the results of education of students on a dual form of education with the participation of representatives of partner employers. The employer appoints a person who will perform the duties of a mentor to the student from among the most experienced and qualified specialists. The employer provides the students with objects and means of work, work clothes. The employer can provide the possibility of internship at the factory to pedagogical and scientific-pedagogical employees of the educational institution.

3.9. Selection procedure for students and companies in the dual higher education system (*how and when the selection process for students and companies will take place*)

The grounds for transferring an education seeker to a dual form of education are an application by the seeker or, in the case of a minor, a statement from one of his parents or other legal representatives, and the signing of an agreement based on the results of the selection of students for studies under a dual form of education. The procedure for the selection of applicants for obtaining higher education in a dual form is agreed upon by the University and the company (organization). Applicants



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of the European Union



who expressed a personal desire and received the written consent of the employer are enrolled (transferred) to the dual form.

To participate in the competitive selection at the time of admission to an educational institution for study under the dual form of higher education, which is carried out in accordance with the Conditions of admission to training for higher education, approved in the prescribed manner, persons who submitted a document confirming the written consent of the employer to provide a workplace in accordance with the requirements of the educational program. If the workplace and the enterprise meet the requirements of the Regulations, according to the Order of the Ministry of Education and Science of Ukraine dated April 13, 2023 No. 426 was registered by the Ministry of Justice of Ukraine, and as a result of the competitive selection, the entrant receives a recommendation for enrollment, the educational institution concludes a bilateral contract with the enterprise. The educational institution can offer the entrant to the dual form of education a workplace in accordance with the bilateral cooperation agreement concluded with the enterprise. In the case of the transfer of a student who is studying in another form of education, at his request, to study in a dual form with the corresponding curriculum, the educational institution and the enterprise with which a bilateral cooperation agreement has been concluded agree on the procedure for selecting persons for studies in a dual form, ensuring its transparency.

The list of employers' proposals for the provision of jobs for dual education is formed by the educational institution before the beginning of the academic year and is published on its official website together with the requirements for applicants and the procedure for selecting applicants. The student of education can independently find a workplace for training in the dual form and contribute to the establishment of cooperation between the educational institution and the enterprise for the organization of such training. In this case, it is considered that the student has passed the selection procedure. Transfer is allowed if the student has received written consent from the employer to provide him with a workplace in accordance with the requirements of the educational program. After the company confirms its readiness to provide training at the workplace to a specific applicant, the applicant is transferred to a dual form of education.



P6-KROK/UA

KROK University/Ukraine

Flexible and generic Dual Higher Education Model
(DHEM)

Project Acronym:	COOPERA
Project full title:	INTEGRATING DUAL HIGHER EDUCATION IN MOLDOVA AND UKRAINE
Project No:	617490-EPP-1-2020-1-MD-EPPKA2-CBHE-SP
WP / Deliverable/ Action:	WP2 / D2.1/ A2.1.3 Dual Higher Education Model (DHEM)
Project partner (s):	P6-KROK/UA
Place/ Date:	Kiev, Ukraine

A2.1.3. DUAL HIGHER EDUCATION MODEL (DHEM) (WP2/D2.1.)

Flexible and generic Dual Higher Education Model (DHEM) for Moldova and Ukraine will present the document that summarizes the needs and requirements of different stakeholders in DHE (companies, HEIs, students).

The DHEM will be elaborated by PWGs (see Act.2.1.1.) as a result of Study Visits to EU partners. This document will be published in English and will represent the basis for generation of specific DHE programmes.

MODEL DESCRIPTION

1. The scope of DHEM;

National education more often comes to the question of how to make students' practice more effective, how to train a student according to a specific educational program so that the student could and wanted to work according to his specialty. World experience in the international educational space offers a modern form - dual education. This is a new phenomenon for Ukraine, but this form of education is currently being implemented as an experimental one.

With the introduction of this form, the employer received the opportunity to participate in the preparation of the initial plan, evaluation of the applicant, in the process of formation of those special competencies that employer wants to see in employees.

2. The objectives of the model: (3-4 objectives)

- improving the quality of professional competences during training under the educational program;
- improvement of the practical component of the educational program;
- strengthening the interrelationship between the higher education institution-acquirer-stakeholder;
- balancing of the requirements of the state standard, labor market for the training of specialists

3. The structure of the model includes the following components:

3.1.integral motivation (the arguments why the chosen study program corresponds to DHE);

The educational program "Journalism" is practically oriented, therefore, only theoretical training and a standard scope of practice is not enough. In the modern educational space, taking into account today's problems, in particular, COVID-19, wartime conditions in Ukraine, it is necessary to switch to innovative forms of education. In addition, the profession of a journalist has narrow specializations within the profession - television journalism, agency, internet journalism, news, sports, political, international journalism, etc. Extended practical training within the framework of dual education will help to make such choice.

3.2. organisation for a dual higher education course (integrated model in existing programme or independent model);

Organization of the course according to the dual form of higher education (integrated model in the existing educational program or independent model):

- Students who choose dual education will continue their studies according to the curriculum, but will spend more time at the enterprise, where they will have the opportunity to get practical professional training and work experience

3.3. distribution of the training hours (theoretical and practical) in the university and at the dual partner economic agent (argumentation for this distribution):

	N. of weeks	Structure for the study in the university		Structure for the in-company training study	
		N. of weeks	Courses	N. of weeks	Courses
1. Semester	14	12	1	2	1
2. Semester	14	10	1	4	1
3. Semester	14	10	2	4	2
4. Semester	14	8	2	6	2
5. Semester	14	5	3	9	3
6. Semester	14	4	3	10	3
7. Semester	14	2	4	12	4
8. Semester	14	2	4	12	4

3.4.form of in-company training for students (weekly, monthly, modular);

modular

3.5.competency component (what competencies and skills will be developed on the in-company training);

General competences:

GC01. Ability to apply knowledge in practical situations.

GC02. Knowledge and understanding of the subject area and understanding of professional activity.

GC03. The ability for search, process and analysis of information from different sources.

GC04. Skills in using information and communication technologies.

Special (professional) competences:

SC01. Ability to apply knowledge from the sphere of social communication in one`s professional activities.

SC02. Ability to create informational content.

SC03. Ability to create a media product.

SC04. Ability to organize and control the team professional activity.

SC05. Ability to efficiently promote media product.

Program results of study

PR01. Explain the production actions and operations on the basis of the acquired knowledge.

PR02. Apply knowledge from the field of subject specialization to create an information product or to conduct an information campaign.

PR03. Evaluate one's own or someone else's information product, an information campaign organized and conducted independently or together with colleagues.

PR04. Search, process and analyze information from various sources.

PR05. Use modern information and communication technologies and specialized software to solve professional tasks.

PR06. Plan your activities and the activities of the team taking into account goals, limitations and foreseeable risks.

PR07. To coordinate the performance of a personal task with the tasks of colleagues.

PR08. To single out facts, events, information, processes about which there is a lack of knowledge in production situations, and to reveal methods and sources of obtaining that knowledge.

PR09. Evaluate the activities of colleagues as bearers of the rights and responsibilities of members of society, representatives of civil society.

PR10. Evaluate the activities of colleagues from the point of view of preserving and multiplying social and cultural values and achievements.

PR11. Communicate freely on professional matters, including oral, written and electronic communication, in Ukrainian language.

PR12. Communicate freely on professional matters, including oral, written and electronic communication, in foreign language.

PR13. Anticipate the reaction of the audience to an information product or to information actions, taking into account the provisions and methods of social communication sciences.

PR14. Generate informational content on a given topic using available and mandatory sources of information.

PR15. Create a qualitative media product on a given topic of a defined genre, taking into account the distribution channel or platform of publication.

PR16. Plan your work and the work of your colleagues, aimed both at generating informational content and creating a media product, as well as its promotion.

PR17. Post operational information about your media product on available Internet platforms.

PR18. Use the necessary knowledge and technologies to get out of crisis communication situations on the basis of tolerance, dialogue and cooperation

3.6. personal component (the resources involved from the companies: the way of training, the collaboration with the academic environment);

Training in the company through internships, performance of production tasks at the enterprise, cooperation with the university, the Council of Young Scientists of the State Institution "Institute for Research of Scientific and Technical Potential and History of Science named after H. Dobrov of the National Academy of Sciences of Ukraine" - our partners in the project.

3.7. technological component (connection of educational programs, curriculum with the institutions of HE, enterprises, etc.);

It is based on the educational program "Journalism", created by the Department of International Relations and Journalism of "KROK" University, as well as the recommendations of the stakeholders of the "Ukraine-inform" TV channel, the international public organization "Internews-Ukraine", as well as the Council of Young Scientists of the State institution "Institute for research of scientific and technical potential and history of science named after H. Dobrov of the National Academy of Sciences of Ukraine "

3.8. infrastructure of organisations in the dual system of study (all the facilities of an institutional nature that guarantee the functioning of a dual course of study: management, coordination and study supervision);

Head of the Department of International Relations and Journalism, "KROK" University Nelia Momot - management; guarantor of the educational program "Journalism" O.Trukhachev - coordination; director of the TV channel "Ukraine-Inform" V. Chorny - training management, appointment of mentors.

3.9. selection procedure for students and companies in the dual higher education system (how and when the selection process for students and companies will take place);

The process of selecting companies took place in the beginning of the project through questionnaires and meetings. Students are selected on the basis of workshops and castings from stakeholders.

RESULTS focused on improving:

- 1) the scientific commitment (The scientific commitment for solving different real problems of the dual partners through the practical activities and theses);
- 2) the construction of educational process;
- 3) the differentiation and personalization of the study process;
- 4) the undertaking professional and technological internship;

- 5) the development of criteria of personal and professional development of the students;
- 6) the systematic coordination and regulation of the training process.

Recommended sources:

1. REPORT on COMPANIES needs for DHE for Republic of Moldova and Ukraine (in Trello);
2. Hesser W. (2018). Implementation of a dual system of higher education within foreign universities and enterprises. 1st edition, Hamburg. ISBN 978-3-940385-42-0. https://www.researchgate.net/publication/326328807_Implementation_of_a_dual_system_ENG_s_180625
3. Karsten Krüger. Alba Molas, Laureano Jiménez . Dual studies in university higher education. Discussion paper 2019/02. Barcelona/Oldenburg. dia-e-logos. 2019. www.dia-e-logos.eu ISBN: 978-3-943087-29-1. https://www.academia.edu/41105126/Dual_studies_in_university_higher_education_Estudios_duales_en_educaci%C3%B3n_superior_universitaria
4. Dr. Todd Davey and Balzhan Orazbayeva (Science-to-Business Marketing Research Centre). Dual Study programmes – the hybrid higher educational programme. VW Group, Baden-Württemberg Cooperative State University (DHBW). Germany.



P7-KKNU/UA

V.N. Karazin Kharkiv National
University/Ukraine

Flexible and generic Dual Higher Education Model
(DHEM)

Project Acronym:	COOPERA
Project full title:	INTEGRATING DUAL HIGHER EDUCATION IN MOLDOVA AND UKRAINE
Project No:	617490-EPP-1-2020-1-MD-EPPKA2-CBHE-SP
WP / Deliverable/ Action:	WP2 / D2.1/ A2.1.3 Dual Higher Education Model (DHEM)
Project partner (s):	P7-KKNU/UA
Place/ Date:	Kharkiv, Ukraine



**A2.1.3. Dual Higher Education Model (DHEM) of the
P7. V.N. Karazin Kharkiv National University
Specialty 073 “Management”
Educational Program “Business Administration”**

1. The scope of application of the dual higher education model

The dual form of higher education is a method of obtaining education that involves a combination of training in educational institutions and other subjects of educational activity with training at workplaces in enterprises, institutions and organizations to acquire a certain qualification. It's considered that in higher education, the dual form is one of the ways of obtaining education for full-time students.

The dual form of education implements a student-centered approach by focusing on meeting the expectations of education seekers regarding successful work in their profession and is aimed at forming in them modern practical knowledge, skills and abilities of professional activity and teamwork at real workplaces, increasing readiness, facilitating and speeding up the transition of graduates from the field of education to the labor field, as well as increasing their overall competitiveness on the labor market.

The implementation of a dual form of education on the Business Administration requires the updating of existing educational programs, the careful selection of teachers who implement the program, the formation of the readiness of specialists to transfer their experience and skills.

The learning process includes the stages of theoretical training, practical training, measures to control the knowledge, skills and abilities of students, final certification of students in cooperation with representatives of enterprises.

2. The objectives of the model

The model gains the following objectives:

- improving the quality of specialist training in accordance with the real requirements of the labor market and providing the national economy with qualified specialists;
- strengthening the role of employers and professional associations in the system of training qualified personnel from the formation of the content of educational programs to the evaluation of training results;
- increasing the competitiveness of University graduates in the conditions of globalization and promoting the growth of youth employment;
- shortening the period of adaptation of graduates to professional activity;
- increasing the motivation of education seekers to study.



3. The structure of the model includes the following components:

3.1. Integral motivation (the arguments why the chosen study program corresponds to DHE):

1) every organization, regardless of the industry and scale of activity, needs managers of different levels. Therefore, the dual form will help to prepare our graduates in the best possible way to carry out their professional duties in accordance with the acquired knowledge and skills;

2) growing need for specialists who possess the skills of management and administration of organizational processes and know how to work in partnership: despite the reduction of the scale of business in Ukraine due to the war, there is a constant need for specialists who would perform organizational functions – the number of non-governmental public organizations, volunteer projects is increasing, that requires appropriate organizational support. Accordingly, after the end of the war, the country will need more such specialists to restore the economy;

3) the Business Administration program implemented by the Karazin Business School is one of the most popular both in the University and in higher education institutions abroad – it expands opportunities for cooperation in the sphere of dual education with business, government organizations and the non-governmental sector of other countries;

4) very high level of orientation of students studying in the Business Administration program to acquire professional skills: starting from the 2-3 academic years, they are already employed in companies, organizations, institutions, or owners of their own businesses. The dual form will contribute to a more efficient allocation of time for theoretical study and practice.

3.2. Organization for a dual higher education course (integrated model in existing program or independent model):

The proposed program provides an integrated model of a dual form of education based on the existing educational program “Business Administration”. Appropriate redistribution of time is foreseen, taking into account the increase in the share of practical-oriented training at enterprises, institutions, and organizations.



3.3. Distribution of the training hours (theoretical and practical) in the university and at the dual partner economic agent (argumentation for this distribution):

Semester	Total in class, h	Lectures (University), h	Laboratories (University), h	University, %	Companies (organizations), %	Practice, h	University, h	Companies (organizations), h	University, %	Companies (organizations), %	Self work, h	University, h	Companies (organizations)	University, %	Companies (organizations), %	Total 4 years, h	University, %	Companies (organizations), %
I semester	392	112	64	100.0	0.0	216	160	56	74.07	25.93	455.5	369.5	86	81.12	18.88	847,5	83.24	16.76
II semester	424	128	64	100.0	0.0	232	158	74	68.10	31.90	543.5	377.5	166	69.46	30.54	967,5	75.19	24.81
III semester	408	192	0	100.0	0.0	216	146	70	67.59	32.41	529.5	353.5	176	66.76	33.24	937,5	73.76	26.24
IV semester	372	188	0	100.0	0.0	184	120	64	65.22	34.78	475.5	311.5	164	65.51	34.49	847,5	73.10	26.90
V semester	426	192	0	100.0	0.0	234	138	96	58.97	41.03	489.0	283.0	206	57.87	42.13	915	66.99	33.01
VI semester	262	124	0	100.0	0.0	138	78	60	56.52	43.48	593.0	323.0	270	54.47	45.53	855	61.40	38.60
VII semester	426	192	0	100.0	0.0	234	130	104	55.56	44.44	489.0	261.0	228	53.37	46.63	915	63.72	36.28
VIII semester	282	96	0	100.0	0.0	186	96	90	51.61	48.39	633.0	325.0	308	51.34	48.66	915	56.50	43.50
Total	2992	1224	128	100.0	0.0	1640	1026	614	62.56	37.44	4208	2604	1604	61.88	38.12	7200	69.19	30.81

The proposed detailed distribution structure of the program is presented in the appendix A.



3.4. Form of in-company training for students (weekly, monthly, modular)

In the 1st year, studies are provided exclusively on the basis of the university. During the academic year, the university should facilitate regular meetings of students with representatives of business, state authorities, non-governmental public organizations, etc.

For 2, 3, 4 years of study, a split week model is suggested: 3 days of study at the university, 2 days at partner enterprises.

3.5. Competency component (what competencies and skills will be developed on the in-company training)

The main task of in-company training is obtaining the ability to solve complex, specialized problems and practical problems characterized by complexity and uncertainty of conditions in management involves applying theories and methods of social and behavioral sciences.

Competences that must be acquired during training are divided into general and special.

General Competences (GC):

GC 1. The ability to exercise their rights and responsibilities as a member of society, to realize the values of civil (democratic) society and the need for its sustainable development, the rule of law, human and civil rights, and freedoms in Ukraine.

GC 2. Ability to preserve and multiply moral, cultural, scientific values and increase the achievements of society based on understanding the history and patterns of development of the subject area, its place in the general system of knowledge about nature and culture, and the development of society, technology and technology, use different types and forms physical activity for active recreation and a healthy lifestyle.

GC 3. Ability to abstract thinking, analysis, synthesis.

GC 4. Ability to apply knowledge in practical situations

GC 5. Knowledge and understanding of the subject area and understanding of the professional activity.

GC 6. Ability to communicate in the state language both orally and in writing.

GC 7. Ability to communicate in a foreign language.

GC 8. Skills in the use of information and communication technologies.

GC 9. The ability to learn and master modern knowledge.

GC 10. Ability to research the appropriate level.

GC 11. Ability to adapt and act in a new situation.

GC 12. Ability to generate new ideas (creativity).

GC 13. Appreciation and respect for diversity and multiculturalism.

GC 14. Ability to work in an international context.



GC 15. Ability to act based on ethical considerations (motives).

GC 16. Ability to manage changes in conditions of uncertainty on a personal and professional level.

GC 17. Ability to recognize and solve problems in conditions of uncertainty

Special Competences (SC)

SC 1. The ability to identify and describe the characteristics of an organization.

SC 2. The ability to analyze the organization's results and compare them with the factors of the external and internal environment.

SC 3. The ability to determine the prospects for the development of the organization.

SC 4. Ability to determine the functional areas of the organization and the relationships between them.

SC 5. Ability to manage the organization and its departments through the implementation of management functions,

SC 6. Ability to act socially responsible and consciously.

SC 7. Ability to choose and use modern management tools.

SC 8. Ability to plan the activities of the organization and manage time.

SC 9. Ability to work in a team and establish interpersonal interaction in solving professional problems.

SC 10. Ability to evaluate the work performed, ensure their quality and motivate the organization's staff.

SC 11. Ability to create and organize effective communications in the management process.

SC 12. Ability to analyze and structure the problems of the organization, to form sound decisions.

SC 13. Understand the principles and norms of law and use them in professional activities.

SC 14. Understand the principles of psychology and use them in professional activities.

SC 15. Ability to form and demonstrate leadership qualities and behavioral Skills.

SC 16. Ability to manage material, financial and human resources in the enterprise.

SC 17. Ability to analyze theories, concepts, programs, modern models, facts, events that determine the interaction mechanisms between the state, business, and society.

SC 18. The ability to use critical thinking techniques in the process of making and implementing management decisions in conditions of uncertainty.

SC 19. Ability to implement the organization's activities following sustainable development goals at all stages of the value chain.



3.6. Personal component (the resources involved from the companies: the way of training, the collaboration with the academic environment)

As part of the Program preparation, the representatives of the working group studied the interests and comments of the academic community (consultations, working meetings, discussions of current problems during university-wide events, etc. were held). The following components were included in the program: building scientific potential, establishing inter-institutional ties, intensifying the exchange of best practices, participation in conferences and round tables, events dedicated to problems of academic integrity, participation in international projects, etc.

On the basis of Karazin Business School, events are regularly held with partner industry clusters on urgent issues of their development.

It should be noted that the University is also a basic institution for the development of Development Strategies of the Kharkiv region and the city of Kharkiv, accordingly, in the process of preparing the socio-economic analysis, current labor market trends are studied. Similar studies were conducted within the framework of projects on the development of a smart specialization strategy for the Kharkiv region.

The Institute actively cooperates with public organizations - agents of reforms, international institutions (for example, the Joint Research Center of the European Commission, the World Intellectual Property Organization), etc.

3.7. Technological component (connection of educational programs, curriculum with the institutions of HE, enterprises, etc.)

In order to ensure compliance of the Program with the requests of employers and to take into account their proposals and interests, during the design of the educational program, a number of consultations and working meetings were held with representatives of institutions and organizations that are drivers of the reform of the modern economic system (state and local self-government bodies, public organizations, scientific and educational institutions, private business).

3.8. Infrastructure of organisations in the dual system of study (all the facilities of an institutional nature that guarantee the functioning of a dual course of study: management, coordination and study supervision)

The dual form of obtaining higher education at the V.N. Karazin Kharkiv National University is introduced according to educational programs by decision of the Academic Council.

After making a decision on the implementation of a dual form of education, the educational institution adopts relevant internal documents, appoints a person (persons) who will perform the duties of the coordinator from the educational institution, creates (if necessary) relevant structural subdivisions.



The educational institution, if necessary, provides timely methodical assistance in the organization of training at workplaces to employer representatives involved in the organization of a dual form of education.

In order to ensure the proper quality of the training of dual-educators, the educational institution must hold regular meetings with employers (at least once a year) and organize feedback from the education seekers, with the participation of a person performing the duties of a curator, about the appropriateness of the training results at workplaces to the goals and requirements of the educational program.

The educational institution provides the opportunity to conduct a joint evaluation of the results of education of students on a dual form of education with the participation of representatives of partner employers.

The employer appoints a person who will perform the duties of a mentor to the student from among the most experienced and qualified specialists.

The employer provides the students with objects and means of work, work clothes.

The employer can provide the possibility of internship at the factory to pedagogical and scientific-pedagogical employees of the educational institution.

3.9. Selection procedure for students and companies in the dual higher education system (how and when the selection process for students and companies will take place)

The grounds for transferring an education seeker to a dual form of education are an application by the seeker or, in the case of a minor, a statement from one of his parents or other legal representatives, and the signing of an agreement based on the results of the selection of students for studies under a dual form of education.

The procedure for the selection of applicants for obtaining higher education in a dual form is agreed upon by the University and the company (organization).

Applicants who expressed a personal desire and received the written consent of the employer are enrolled (transferred) to the dual form.

26. To participate in the competitive selection at the time of admission to an educational institution for study under the dual form of professional pre-university, higher education, which is carried out in accordance with the Conditions of admission to training for professional pre-university, higher education, approved in the prescribed manner, persons who submitted a document confirming the written consent of the employer to provide a workplace in accordance with the requirements of the educational program. If the workplace and the enterprise meet the requirements of this Regulation, and as a result of the competitive selection, the entrant receives a recommendation for enrollment, the educational institution concludes a bilateral contract with the enterprise. The educational institution can



offer the entrant to the dual form of education a workplace in accordance with the bilateral cooperation agreement concluded with the enterprise.

In the case of the transfer of a student who is studying in another form of education, at his request, to study in a dual form with the corresponding curriculum, the educational institution and the enterprise with which a bilateral cooperation agreement has been concluded agree on the procedure for selecting persons for studies in a dual form, ensuring its transparency. The list of employers' proposals for the provision of jobs for dual education is formed by the educational institution before the beginning of the academic year and is published on its official website together with the requirements for applicants and the procedure for selecting applicants. The student of education can independently find a workplace for training in the dual form and contribute to the establishment of cooperation between the educational institution and the enterprise for the organization of such training. In this case, it is considered that the student has passed the selection procedure.

Transfer is allowed if the student has received written consent from the employer to provide him with a workplace in accordance with the requirements of the educational program.

After the company confirms its readiness to provide training at the workplace to a specific applicant, the applicant is transferred to a dual form of education.



Appendix A

Detailed distribution structure of the Program

Courses	Distribution by semesters		ECTS	Hours											
	Four-level rating scale	Two-level rating scale		Total amount	Classroom including							Self work, including	University	companies	
					Total classroom	Lectures (University), h	Laboratories, h	University	companies	Practice, h	University				companies
I semester															
History of Ukraine	1		3	90	48	32	0			16	16		42	42	
Foreign language		1	2,25	67,5	40		0			40	40		27,5	27,5	
Business communication and presentation skills		1	4	120	48	32	0			16	16		72	72	
Introduction to business administration	1		4	120	64	32	0			32	32		56	56	
Higher mathematics	1		5	150	64	16	0			48	48		86	86	
Computer science	1		5	150	64		64	64		0			86	86	
Academic training "Start-up project"		1	5	150	64		0			64	8	56	86		86
Total for the I semester, hours				848	392	112	64	64	0	216	160	56	456	370	86
<i>Total for the I semester, weeks</i>													10 weeks		
II semester															
Foreign language		2	2,25	67,5	40		0			40	40		27,5	27,5	
Microeconomics	2		5	150	64	32	0			32	32		86	70	16
Statistics	2		5	150	64	32	0			32	32		86	70	16
Ukrainian language (by professional direction)		2	5	150	64	32	0			32	32		86	70	16
Infographics		2	5	150	64		64	64		0			86	70	16
Critical thinking		2	5	150	64	32	0			32	22	10	86	70	16
Academic training "Event creation"		2	5	150	64		0			64		64	86		86
Total for the II semester, hours				968	424	128	64	64	0	232	158	74	544	378	166
<i>Total for the II semester, weeks</i>													16 weeks		
III semester															
Foreign language		3	2,25	67,5	40					40	40		27,5	27,5	
Macroeconomics	3		5	150	64	32				32	32		86	56	30
Probability theory and Mathematical statistics	3		3	90	48	16				32	32		42	42	



Courses	Distribution by semesters		ECTS	Hours											
	Four-level rating scale	Two-level rating scale		Total amount	Classroom								Self work, including	University	companies
					Total classroom	including									
						Lectures (University), h	Laboratories, h	University	companies	Practice, h	University	companies			
Economics and Mathematics modelling	3		4	120	48	16				32	32		72	46	26
Economics of business entities	3		5	150	64	32				32	10	22	86	46	40
Elective inter-faculty discipline		3	3	90	32	32				0			58	30	28
Visualization of business processes / European integration / Self-management / Fundraising		3	5	150	64	32				32	32		86	56	30
Labor law / Civil law / Commercial law / International law		3	4	120	48	32				16	16		72	50	22
Total for the III semester, hours				938	408	192	0	0	0	216	146	70	530	354	176
Total for the III semester, weeks	16 weeks														
IV semester															
Foreign language	4		2,2 5	67,5	40					40	40		27,5	27,5	
Philosophy	4		3	90	48	32				16	16		42	42	
Business ethics	4		5	150	64	32				32	16	16	86	50	36
Management	4		5	150	64	32				32	16	16	86	50	36
Research methods in business		4	5	150	64	32				32	16	16	86	50	36
Elective inter-faculty discipline		4	3	90	28	28				0			62	42	20
State and regional management / Forecasting and socio-economic planning / Technologies of social development / Sustainable management		4	5	150	64	32				32	16	16	86	50	36
Total for the IV semester, hours				848	372	188	0	0	0	184	120	64	476	312	164
Total for the IV semester, weeks	16 weeks														
V semester															
Foreign language (by professional direction)		6,8	2,5	75	42					42	42		33	33	
Marketing	5		5	150	64	32				32	16	16	86	50	36
Finance	5		5	150	64	32				32	16	16	86	50	36



Courses	Distribution by semesters		ECTS	Hours											
	Four-level rating scale	Two-level rating scale		Total amount	Classroom								Self work, including	University	companies
					Total classroom	including									
						Lectures (University), h	Laboratories, h	University	companies	Practice, h	University	companies			
Accounting		5	5	150	64	32				32	16	16	86	50	36
International business-management	5		5	150	64	32				32	16	16	86	50	36
Elective inter-faculty discipline		5	3	90	64	32				32	16	16	26		26
E-business / Marketing communications / Management of financial instruments		5	5	150	64	32				32	16	16	86	50	36
Total for the V semester, hours				915	426	192	0	0	0	234	138	96	489	283	206
<i>Total for the V semester, weeks</i>	16 weeks														
VI semester															
Foreign language (by professional direction)		6,8	2,5	75	42					42	42		33	33	
Corporate finance	6		4	120	48	24				24	8	16	72	52	20
Operational management	6		4	120	48	24				24	10	14	72	52	20
Auditing by international standards	6		4	120	48	24				24	8	16	72	52	20
Work placement		6	6	180	0					0			180	40	140
Elective inter-faculty discipline		6	3	90	28	28				0			62	42	20
Risk-management / B2B-marketing / Insurance		6	5	150	48	24				24	10	14	102	52	50
Total for the VI semester, hours				855	262	124	0	0	0	138	78	60	593	323	270
<i>Total for the VI semester, weeks</i>	16 weeks														
VII semester															
Foreign language (by professional direction)		6,8	2,5	75	42					42	42		33	33	
HR-Management	7		4	120	64	32				32	14	18	56	30	26
Negotiation	7		4	120	64	32				32	16	16	56	30	26
Export potential and methods of its assessment / Management analysis / Potential and development of an enterprise / Organizational behavior		7	5	150	64	32				32	14	18	86	42	44
Managerial modelling / Marketing modelling / Purchasing management		7	5	150	64	32				32	14	18	86	42	44



Courses	Distribution by semesters		ECTS	Hours										Self work, including University companies	University companies	
	Four-level rating scale	Two-level rating scale		Total amount	Classroom							Practice, h	University			companies
					Total classroom	including										
						Lectures (University), h	Laboratories, University	companies	University	companies						
Service Management / Service Marketing / Purchasing Management		7	5	150	64	32					32	14	18	86	42	44
Managerial accountancy / Digital-marketing / Accountancy and financial reporting based on international standards		7	5	150	64	32					32	16	16	86	42	44
Total for the VII semester, hours				915	426	192	0	0	0	234	130	104	489	261	228	
<i>Total for the VII semester, weeks</i>															<i>16 weeks</i>	
VIII semester																
Foreign language (by professional direction)		6,8	2,5	75	42						42	32	10	33	33	
Conflict resolution techniques / Tax accounting and reporting / Customs regulation / Logistics		8	4	120	48	24					24	14	10	72	52	20
Innovation management	8		4	120	48	24					24	14	10	72	52	20
Cross-cultural management	8		3	90	48	24					24	12	12	42	22	20
Business planning	8		4	120	48	24					24	14	10	72	52	20
Training "Adaptation to business environment"		8	5	150	48						48	10	38	102		102
Bachelor's qualification paper			8	240	0						0			240	114	126
Total for the VIII semester, hours				915	282	96	0	0	0	186	96	90	633	325	308	
<i>Total for the VIII semester, weeks</i>															<i>16 weeks</i>	
TOTAL, hours				7200	2992	1224	128	128	0	1640	1026	614	4208	2604	1604	
<i>TOTAL, weeks</i>															<i>122 weeks</i>	



**A2.1.3. Dual Higher Education Model (DHEM) of the
P7. V.N. Karazin Kharkiv National University
Specialty 073 “Management”
Educational Program “Business Administration”**

1. The scope of application of the dual higher education model

The dual form of higher education is a method of obtaining education that involves a combination of training in educational institutions and other subjects of educational activity with training at workplaces in enterprises, institutions and organizations to acquire a certain qualification. It's considered that in higher education, the dual form is one of the ways of obtaining education for full-time students.

The dual form of education implements a student-centered approach by focusing on meeting the expectations of education seekers regarding successful work in their profession and is aimed at forming in them modern practical knowledge, skills and abilities of professional activity and teamwork at real workplaces, increasing readiness, facilitating and speeding up the transition of graduates from the field of education to the labor field, as well as increasing their overall competitiveness on the labor market.

The implementation of a dual form of education on the Business Administration requires the updating of existing educational programs, the careful selection of teachers who implement the program, the formation of the readiness of specialists to transfer their experience and skills.

The learning process includes the stages of theoretical training, practical training, measures to control the knowledge, skills and abilities of students, final certification of students in cooperation with representatives of enterprises.

2. The objectives of the model

The model gains the following objectives:

- improving the quality of specialist training in accordance with the real requirements of the labor market and providing the national economy with qualified specialists;
- strengthening the role of employers and professional associations in the system of training qualified personnel from the formation of the content of educational programs to the evaluation of training results;
- increasing the competitiveness of University graduates in the conditions of globalization and promoting the growth of youth employment;
- shortening the period of adaptation of graduates to professional activity;
- increasing the motivation of education seekers to study.



3. The structure of the model includes the following components:

3.1. Integral motivation (the arguments why the chosen study program corresponds to DHE):

1) every organization, regardless of the industry and scale of activity, needs managers of different levels. Therefore, the dual form will help to prepare our graduates in the best possible way to carry out their professional duties in accordance with the acquired knowledge and skills;

2) growing need for specialists who possess the skills of management and administration of organizational processes and know how to work in partnership: despite the reduction of the scale of business in Ukraine due to the war, there is a constant need for specialists who would perform organizational functions – the number of non-governmental public organizations, volunteer projects is increasing, that requires appropriate organizational support. Accordingly, after the end of the war, the country will need more such specialists to restore the economy;

3) the Business Administration program implemented by the Karazin Business School is one of the most popular both in the University and in higher education institutions abroad – it expands opportunities for cooperation in the sphere of dual education with business, government organizations and the non-governmental sector of other countries;

4) very high level of orientation of students studying in the Business Administration program to acquire professional skills: starting from the 2-3 academic years, they are already employed in companies, organizations, institutions, or owners of their own businesses. The dual form will contribute to a more efficient allocation of time for theoretical study and practice.

3.2. Organization for a dual higher education course (integrated model in existing program or independent model):

The proposed program provides an integrated model of a dual form of education based on the existing educational program “Business Administration”. Appropriate redistribution of time is foreseen, taking into account the increase in the share of practical-oriented training at enterprises, institutions, and organizations.



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3.3. Distribution of the training hours (theoretical and practical) in the university and at the dual partner economic agent (argumentation for this distribution):

Semester	Total in class, h	Lectures (University), h	University, %	Companies (organizations), %	Practice, h	University, h	Companies (organizations), h	University, %	Companies (organizations), %	Self work, h	University, h	Companies (organizations)	University, %	Companies (organizations), %	Total year, h	University, %	Companies (organizations), %
I semester	270	135	100.0	0.0	135	100	35	74	26	570	456	114	80	20	840	82,3%	17,7
II semester	288	176	100.0	0.0	112	72	40	64,3	35,7	672	400	272	59,5	40,5	960	67,5%	32,5
III semester	162	63	100.0	0.0	99	54	45	54,5	45,4	738	414	324	56,1	43,9	900	59,0%	40,0
Total	720	374	100,0	0,0	346	226	120	65,3%	34,7%	1980	1270	710	64,1%	35,9%	2700	69,3%	30,4%

The proposed detailed distribution structure of the program is presented in the appendix A.



3.4. Form of in-company training for students (weekly, monthly, modular)

During the 1st semester academic year, the university should facilitate regular meetings of students with representatives of business, state authorities, non-governmental public organizations, etc.

For 2, 3 semesters of study, a split week model is suggested: 3 days of study at the university, 2 days at partner enterprises.

3.5. Competency component (what competencies and skills will be developed on the in-company training)

The main task of in-company training is obtaining the ability to solve complex, specialized problems and practical problems characterized by complexity and uncertainty of conditions in management involves applying theories and methods of social and behavioral sciences.

Competences that must be acquired during training are divided into general and special.

General Competences (GC):

GC1. Ability to conduct research at the appropriate level;

GC2. Ability to communicate with representatives of other professional groups of different levels (with experts from other fields of knowledge / types of economic activity);

GC3. Skills in the use of information and communication technologies;

GC4. The ability to motivate people to move towards a common goal;

GC5. Ability to act on the basis of ethical considerations (motives);

GC6. Ability to generate new ideas (creativity);

GC7. Ability to abstract thinking, analysis and synthesis

Professional Competences (PC)

PC1. Ability to select and use management concepts, methods and tools, including in accordance with defined objectives and international standards;

PC2. Ability to establish values, visions, mission, goals and criteria by which the organization determines further directions of development, to develop and implement appropriate strategies and plans;

PC3. Ability for self-development, lifelong learning and effective self-management;

PC4. Ability to effectively use and develop resources in the organization;

PC5. Ability to create and organize effective communications in the management process;

PC6. Ability to form leadership qualities and demonstrate them in the process of managing people;

PC7. Ability to develop and manage projects, show initiative and entrepreneurship;



- PC8. Ability to use psychological technologies to work with staff;
- PC9. Ability to analyze and structure organizational problems, make effective management decisions and ensure their implementation;
- PC10. Ability to manage the organization and its development.
- PC11. Ability to use modern tools for organizing and managing business processes;
- PC12. Ability to apply business research methods and consulting skills;
- PC13. Ability to conduct operational analysis and improve the production and economic activities of the company;
- PC14. Ability to manage industrial enterprises of various forms of ownership and spheres of activity, divisions, teams, projects, using a system of modern methods of management and administration, technologies, integrated management approaches;
- PC15. Ability to substantiate anti-crisis programs, ensure effective implementation of changes, develop projects of organizational and economic development for the formation of strategic competitive advantages in conditions of shortage of financial resources.

3.6. Personal component (the resources involved from the companies: the way of training, the collaboration with the academic environment)

As part of the Program preparation, the representatives of the working group studied the interests and comments of the academic community (consultations, working meetings, discussions of current problems during university-wide events, etc. were held). The following components were included in the program: building scientific potential, establishing inter-institutional ties, intensifying the exchange of best practices, participation in conferences and round tables, events dedicated to problems of academic integrity, participation in international projects, etc.

At the Karazin Business School, events are regularly held with partner industry clusters on urgent issues of their development.

It should be noted that the University is also a basic institution for the development of Development Strategies of the Kharkiv region and the city of Kharkiv, accordingly, in the process of preparing the socio-economic analysis, current labour market trends are studied. Similar studies were conducted within the framework of projects on the development of a smart specialization strategy for the Kharkiv region.

The Institute actively cooperates with public organizations - agents of reforms, international institutions (for example, the Joint Research Center of the European Commission, the World Intellectual Property Organization), etc.



3.7. Technological component (connection of educational programs, curriculum with the institutions of HE, enterprises, etc.)

To ensure compliance of the Program with the requests of employers and to take into account their proposals and interests, during the design of the educational program, a number of consultations and working meetings were held with representatives of institutions and organizations that are drivers of the reform of the modern economic system (state and local self-government bodies, public organizations, scientific and educational institutions, private business).

3.8. Infrastructure of organisations in the dual system of study (all the facilities of an institutional nature that guarantee the functioning of a dual course of study: management, coordination and study supervision)

The dual form of obtaining higher education at the V.N. Karazin Kharkiv National University is introduced according to educational programs by decision of the Academic Council.

After making a decision on the implementation of a dual form of education, the educational institution adopts relevant internal documents, appoints a person (persons) who will perform the duties of the coordinator from the educational institution, creates (if necessary) relevant structural subdivisions.

The educational institution, if necessary, provides timely methodical assistance in the organization of training at workplaces to employer representatives involved in the organization of a dual form of education.

In order to ensure the proper quality of the training of dual-educators, the educational institution must hold regular meetings with employers (at least once a year) and organize feedback from the education seekers, with the participation of a person performing the duties of a curator, about the appropriateness of the training results at workplaces to the goals and requirements of the educational program.

The educational institution provides the opportunity to conduct a joint evaluation of the results of education of students on a dual form of education with the participation of representatives of partner employers.

The employer appoints a person who will perform the duties of a mentor to the student from among the most experienced and qualified specialists.

The employer provides the students with objects and means of work, work clothes.

The employer can provide the possibility of internship at the factory to pedagogical and scientific-pedagogical employees of the educational institution.



3.9. Selection procedure for students and companies in the dual higher education system (how and when the selection process for students and companies will take place)

The grounds for transferring an education seeker to a dual form of education are an application by the seeker or, in the case of a minor, a statement from one of his parents or other legal representatives, and the signing of a agreement based on the results of the selection of students for studies under a dual form of education.

The procedure for the selection of applicants for obtaining higher education in a dual form is agreed upon by the University and the company (organization).

Applicants who expressed a personal desire and received the written consent of the employer are enrolled (transferred) to the dual form.

To participate in the competitive selection at the time of admission to an educational institution for study under the dual form of professional higher education, which is carried out in accordance with the Conditions of admission to training for professional higher education, approved in the prescribed manner, persons who submitted a document confirming the written consent of the employer to provide a workplace in accordance with the requirements of the educational program. If the workplace and the enterprise meet the requirements of this Regulation, and as a result of the competitive selection, the entrant receives a recommendation for enrollment, the educational institution concludes a bilateral contract with the enterprise. The educational institution can offer the entrant to the dual form of education a workplace in accordance with the bilateral cooperation agreement concluded with the enterprise.

In the case of the transfer of a student who is studying in another form of education, at his request, to study in a dual form with the corresponding curriculum, the educational institution, and the enterprise with which a bilateral cooperation agreement has been concluded agree on the procedure for selecting persons for studies in a dual form, ensuring its transparency. The list of employers' proposals for the provision of jobs for dual education is formed by the educational institution before the beginning of the academic year and is published on its official website together with the requirements for applicants and the procedure for selecting applicants. The student of education can independently find a workplace for training in the dual form and contribute to the establishment of cooperation between the educational institution and the enterprise for the organization of such training. In this case, it is considered that the student has passed the selection procedure.

Transfer is allowed if the student has received written consent from the employer to provide him with a workplace in accordance with the requirements of the educational program.

After the company confirms its readiness to provide training at the workplace to a specific applicant, the applicant is transferred to a dual form of education.



Appendix A

Detailed distribution structure of the Program

Courses	Distribution by semesters		ECTS	Hours										Self work, including	University	companies
	Four-level rating scale	Two-level rating scale		Total amount	Classroom						Self work, including	University	companies			
					Total classroom	including										
						Lectures	University	Companies	Practice, h	University						
I semester																
Foreign Language by Profession/ Ukrainian as a Foreign Language*		1	4	120	45				45	45		75	75			
Methodology and Organization of Scientific Research	1		4	120	30	15	15		15	15		90	90			
Management of Organization	1		5	150	45	30	30		15	10	5	105	80	25		
Financial Management	1		5	150	45	30	30		15	10	5	105	80	25		
Enterprise's Competitiveness	1		5	150	45	30	30		15	10	5	105	80	25		
Change Management		1	5	150	60	30	30		30	10	20	90	51	39		
Total for the I semester, hours				840	270	135	135	0	135	100	35	570	456	114		
Total for the I semester, weeks													15 weeks			
II semester																
Leadership		2	5	150	32	16	16		16	8	8	118	80	38		
Strategic Management	2		5	150	64	32	32		32	16	16	86	70	16		
Production Practice		2	6	180								180	50	130		
Selective educational component 2		2	4	120	48	32	32		16	12	4	72	50	22		
Selective educational component 3		2	4	120	48	32	32		16	12	4	72	50	22		
Selective educational component 4		2	4	120	48	32	32		16	12	4	72	50	22		
Selective educational component 5		2	4	120	48	32	32		16	12	4	72	50	22		
Total for the II semester, hours				960	288	176	176	0	112	72	40	672	400	272		
Total for the II semester, weeks													16 weeks			
III semester																
Project Management	3		4	120	27	18	18		9	9	0	93	93	0		
Diploma seminar		3	3	90	27				27	27	0	63	63	0		
Selective educational component 1		3	3	90	27	18	18		9	9	0	63	30	33		
Selective educational component 6		3	4	120	27	9	9		18	3	15	93	40	53		
Selective educational component 7		3	4	120	27	9	9		18	3	15	93	40	53		
Selective educational component 8		3	4	120	27	9	9		18	3	15	93	40	53		
Master's Thesis			8	240								240	108	132		
Total for the III semester, hours				900	162	63	63	0	99	54	45	738	414	324		
Total for the III semester, weeks													9 weeks			
Total for the Programm, hours				2700	720	374	374	0	346	226	120	1980	1270	710		



P8-ONEU/UA

Odessa National University of
Economics/Ukraine

Flexible and generic Dual Higher Education Model
(DHEM)

Project Acronym:	COOPERA
Project full title:	INTEGRATING DUAL HIGHER EDUCATION IN MOLDOVA AND UKRAINE
Project No:	617490-EPP-1-2020-1-MD-EPPKA2-CBHE-SP
WP / Deliverable/ Action:	WP2 / D2.1/ A2.1.3 Dual Higher Education Model (DHEM)
Project partner (s):	P8-ONEU/UA
Place/ Date:	Odessa, Ukraine



A2.1.3. Dual Higher Education Model (DHEM) of the P8.Odessa National Economic University Specialty 076 "Entrepreneurship, trade and exchange activity" EP "Economics and Business Planning"

1. Scope of application of the model of dual higher education

The dual form of obtaining professional education is a method of learning, according to which theoretical material is mastered in an institution with a teacher, and practical training takes place at enterprises, which allows students to be in constant contact with modern challenges of effective management of enterprises in various fields of activity. Therefore, this form of professional education is gaining popularity.

In 2018, Ukraine developed and adopted the Concept of training specialists based on a dual form of education, the purpose of which is to develop the principles of state policy on improving the quality of professional training of specialists based on a dual form of education. In fact, the adoption of this document marked the beginning of the introduction of dual education in its entirety, including in higher education. Already in the fall of 2019, the Ministry of Education and Science of Ukraine introduced a large-scale pilot project in the field of dual education by a corresponding order.

During conversations with students of the educational program "Economics and Business Planning" of the speciality 076 "Entrepreneurship, trade and exchange activity", a high level of their interest in engaging in this form of education was revealed, as it will speed up the process of adapting theoretical knowledge to practical implementation, as well as to understand exactly what skills a specialist of the chosen specialty needs to be competitive. According to the students, such experience will allow them to be confident in their professional qualities in the field of business. Receiving a monetary reward for a dual form of education is an additional incentive for effective study at the university.

On the other hand, business representatives who were involved at the stage of negotiations on participation in such a form of education also expressed interest in involving students and sharing practical skills with them, since it is difficult to find a ready-made specialist in the labor market, and in cooperation with higher education institutions there is an opportunity to adapt students to the conditions of a specific business and to provide the most successful students with the opportunity to continue working in the future. According to business representatives, engaging students as employees increases the motivation of the latter to fruitfully master practical skills at the workplace, as well as understand the importance of obtaining theoretical knowledge at the university.



2. Model aims

2.1. Elaboration of the principles of the policy of higher education institutions on improving the quality of practical training of specialists on the basis of a dual form of education with the simultaneous preservation of the academic component of higher education.

2.2. Providing the national economy with qualified specialists based on the formation of the "University-Company-Student" triad, which will contribute to strengthening relations with stakeholders and increasing the role of employers in the formation of educational programs.

2.3. Increasing the competitiveness of higher education graduates in the labor market by strengthening their practical training, shortening the adaptation period, and strengthening motivation and understanding of the requirements for professional activity.

3. Model structure

3.1. Integral motivation

Based on the results of communications with stakeholders, the need to strengthen the practical training of higher education graduates and to adapt them to work in various areas of business was argued.

In particular, according to the results of surveys of graduates, students, employers, and other stakeholders for the EP "Economics and business planning" speciality 076 "Entrepreneurship, trade, and stock market activity", among the recommendations it is worth noting the need to constantly hold various types of events with the involvement of business representatives (round tables, lectures, business games, etc.).

It is also worth noting that a significant number of students studying under the EP start working already from the 2nd year, drawing up individual schedules (and not always in the chosen specialty, since they have to earn money to pay for training contracts). In connection with this, employers face difficulties in the further selection of qualified and motivated graduates.

In summary, the following main motives for the introduction of a dual form of education under the EP "Economics and Business Planning" speciality 076 "Entrepreneurship, Trade and Exchange Activity" can be identified:

- The need to strengthen practical training under EP;
- To regulate and improve the learning process for full-time students who work by profession and study according to an individual schedule;
- To provide an opportunity for employers to select the most motivated and loyal specialists.



3.2. Organization of the course according to the dual form of obtaining higher education

When organizing the course for the dual form of higher education, an integrated model was chosen in the existing educational program (EP "Economics and business planning" speciality 076 "Entrepreneurship, trade and stock market activity"). The educational program was introduced at ONEU in 2013, has an accreditation certificate, and constantly receives favourable reviews from all categories of stakeholders. The existing EP has well-founded training results, material, technical and personnel support; as well as the full-time study plan, which is the basis for the development of the dual study plan.

The organization of the course according to the existing EP will simplify the transition of students from full-time to a dual form of education and vice versa in case of such a need.

3.3. Distribution of study hours (theoretical and practical) between the university and the partner - an economic agent given in the table

	Number of weeks	The structure of study at the university		The structure of training at the enterprise – professional training of students according to the dual form of obtaining higher education through familiarization study visits to partner companies *	
		Number of hours	%	Number of hours	%
1 Semester	18	870	96,67	30	3,33
2 Semester	17	870	96,67	30	3,33
3 Semester	18	840	93,33	60	6,67
4 Semester	17	600	66,67	300	33,33
5 Semester	18	600	66,67	300	33,33
6 Semester	15	630	70,00	270	30,00
7 Semester	18	630	70,00	270	30,00
8 Semester	8	360	40,00	540	60,00
Total	129	5400	75,00	1800	25,00

*Training Study

It should be noted that the selection takes place in the 1st year, but the process of paid internship and the conclusion of an employment contract takes place no earlier than the 2nd year of study (but no later than the 3rd).



Year of study	Types of activities/learning	
4 COURSE	Work under an employment contract/ internship in various departments/ implementation of projects	
3 COURSE		
2 COURSE	Internship	Conclusion of an employment contract
1 COURSE	Mini-lectures, workshops, trainings	

The distribution of credits between the University and Employers in the field of business (hereinafter - Business) is shown in the table:

Semesters	Explanation of the number of credits/hours
1 Semester	Selection for the program and guest visits (1)
2 Semester	Guest visits (1)
3 Semester	Elective academic disciplines (hereinafter Elective AD) (4)
4 Semester	Basics of business (2), Business ethics (2), Accounting and taxation (2), Elective AD (4)
5 Semester	Assessment of the market situation (2), Business planning (2), Exchange activity (2), Selective AD (4)
6 Semester	Economics and organization of business activity (2), Economics and organization of trade (2), Elective AD (4), Course work (1)
7 Semester	Analysis of entrepreneurial projects (2), Public-private partnership (2), Information systems and technologies in entrepreneurship (1), Selective AD (4)
8 Semester	Justification of business decisions and risk assessment (2), Training (1), Practice (6), Selective AD (4), BQW (5)

The corresponding number of credits and hours is displayed on the student's scorecard. Credits for attestation are divided into 5 (a higher education institution) + 5 (Business)

3.4. Form of training of students at the enterprise (weekly, monthly, modular)

The model of the divided working day was chosen as the form of education of students under the EP "Economics and Business Planning". From 8:00 a.m. to 1:00 p.m., the student listens to a theoretical course at the university together with other full-time students, and from 2:00 p.m. to 6:00 p.m. the student works at a business workplace.

3.5. Competency component (what competencies and skills will be developed during student training at the enterprise)

EP "Economics and Business Planning" is aimed at providing specialized knowledge, developing skills and competencies to solve the tasks of starting one's own business in various spheres and branches of the economy and managing enterprises,



institutions and organizations of various spheres of activity. The program allows one to comprehensively study the specifics of designing own business in various spheres of activity, the peculiarities of the functioning of business structures, and solving problems of economic activity. The emphasis is placed on the development of professional self-improvement, creative thinking, and finding business solutions in the practice of entrepreneurship and trade.

Training under OP provides the following competencies:

in accordance with the national standard of higher education general competencies

GC 1. Ability to abstract thinking, analysis, and synthesis.

GC 2. Ability to apply knowledge in practical situations.

GC 3. Ability to communicate in the national language both orally and in writing.

GC 4. Ability to communicate in a foreign language.

GC 5. Skills in using information and communication technologies.

GC 6. Ability to search, process, and analyze information from various sources.

GC 7. Ability to work in a team.

GC 8. Ability to show initiative and entrepreneurship.

GC 9. The desire to preserve the environment.

GC 10. Ability to act responsibly and consciously.

GC 11. Ability to realize one's rights and responsibilities as a member of society, to realize the values of a civil (free democratic) society and the need for its sustainable development, the rule of law, the rights and freedoms of a person and a citizen in Ukraine.

GC 12. The ability to preserve and multiply moral, cultural, scientific values and achievements of society based on an understanding of the history and patterns of development of the subject area, its place in the general system of knowledge about nature and society, and in the development of society, technology and technologies, to use various types and forms of motor activity for active recreation and leading a healthy lifestyle.

professional competences

PC 1. Critical understanding of the theoretical foundations of business, trade, and exchange activity.

PC 2. Ability to choose and use appropriate methods and tools for justifying decisions regarding the creation and functioning of business, trade, and stock exchange structures.

PC 3. Ability to carry out activities in the interaction of subjects of market relations.



PC 4. Ability to apply innovative approaches in the activities of a business, trade, and stock exchange structures.

PC 5. Ability to determine and evaluate the characteristics of goods and services in business, trade, and stock exchange activities.

PC 6. Ability to carry out activities in compliance with the requirements of regulatory and legal documents in the field of business, trade, and stock exchange activities.

PC 7. Ability to define and perform professional tasks related to the organization of business, trade, and exchange structures.

PC 8. Ability to apply the basics of accounting and taxation in business, trade, stock exchange activities.

PC 9. Ability to organize the foreign economic activity of business, trade, and exchange structures.

PC 10. Ability to business planning, assessment of market conditions, and results of activities in the field of entrepreneurship, trade, and exchange practice taking into account risks.

PC 11. Ability to determine and evaluate the tools of state regulation of economic processes and to use the appropriate toolkit in the organization of business structures.

PC 12. Ability to perform professional tasks in the economic management of an enterprise under market conditions of business.

PC 13. Ability to identify, pose and solve problems in the field of business organization.

PC 14. Ability to organize trade and conduct business activities in the field of trade and service provision.

PC 15. Ability to initiate, assess the feasibility, and implement public-private partnership projects in business activities.

PC 16. Ability to evaluate the effectiveness of investment projects in the field of entrepreneurship, trade, and stock exchange activity.

PC 17. The ability to justify business decisions with varying degrees of uncertainty and risk and to apply risk management skills of various business entities.

3.6. Personal component (involved resources from partner companies: learning method, cooperation with the academic environment)

A preliminary consent was obtained from business representatives to sign cooperation agreements with ONEU, followed by the signing of agreements between employers and students.

Employers are annually involved in the discussion of EP in the form of questionnaires and holding round tables. As part of the preparation for the piloting of the project on the introduction of a dual form of education, meetings were held with representatives of ONEU management and business in order to agree on the goals of the



introduction of dual education, educational plans, control methods and forms of interaction.

3.7. Technological component (connection of educational programs, curricula of higher education institutions, enterprises, etc.)

As part of interaction with stakeholders, the content of EP "Economics and Business Planning" is discussed annually with representatives of employers in the format of questionnaires and/or round tables. Based on the results of such discussions, appropriate changes are made to the curriculum, methods, forms of teaching, and the content of work programs, which undergo examination and are approved by the Higher Education Institution.

3.8. The infrastructure of organizations in the system of dual education (all means of an institutional nature that guarantee the functioning of the course according to the dual form of obtaining higher education: management, coordination, and control of education)

The organization of dual education at the Higher Education Institution is carried out in accordance with the Regulations on the Training of Specialists in the Dual Form of Higher Education at the Odessa National Economic University (approved on August 30, 2021).

<https://drive.google.com/file/d/1DUXZfayubArtsVffF5NSFzhgVrg0sMBn/view>

The university is responsible for the implementation of the educational program in its entirety. The business entity that is a partner in the organization of a dual form of higher education is responsible for implementing the training program defined in the contract at workplaces.

The University appoints a dual study coordinator from the higher education institution to ensure the organization of studies under the dual form of obtaining higher education and effective communication between all interested parties. The coordinator of dual training from a business entity is an official who is responsible for the organizational and methodological support of training under the dual form of obtaining higher education and is appointed by the head of the business entity.

The coordinators of dual training from the University and the business entity discuss the educational program by specialty regarding compliance with professional standards and requirements for the competencies of future specialists.

Within the limits of individual educational components, coordination is ensured by the interaction between the training supervisor from ONEU and the mentor from the business.

The curator of the dual training is a pedagogical, scientific and pedagogical employee of the University who supervises the implementation of the individual curriculum of dual training and the program of practical training for a separate



educational discipline at the workplace under the dual form of obtaining higher education and is appointed by order of the rector of the University. A *mentor of dual training* is a qualified employee of a business entity who manages the training of students of higher education at workplaces in accordance with the program of practical training at the workplace and is appointed by the head of the business entity.

3.9. The procedure for selecting students and companies for the system of dual higher education (how and when the process of selecting students and partner companies will take place)

The procedure for the selection of applicants for obtaining higher education in a dual form is agreed upon by the University and the Business Entity and is regulated by the Regulations on the Training of Specialists in the Dual Form of Obtaining Higher Education at the Odessa National Economic University (approved on August 30, 2021).

It is based on the five-step procedure described below.

1st step – *announcement of the competitive selection of applicants for higher education in the dual form.*

In the case of receiving an application from a business entity (enterprise, institution, organization) to carry out the training of specialists in a dual form of obtaining higher education in the corresponding educational program or specialty, an announcement is made on the University's website about the start of the competitive selection of applicants.

2nd step – *submission of applications.* Within 10 days after the announcement of the start of the competitive selection of applicants for higher education in the dual form, applicants for participation in the competition submit to the dean's office of the faculty (or fill out a Google form) the following documents:

- ✓ application for participation in the competitive selection (*Appendix C*);
- ✓ motivation letter (justification of the need, expectations from the dual form of education - up to 2 pages).

3rd step – *selection of applicants for higher education according to the dual form.* Within five days after the completion of step 2, the expert commission for the speciality or for the educational program, together with the representatives of the Business Entity, selects up to 5 applicants for one vacant position based on the results of the analysis of the information in the motivation letter.

Typical criteria for the selection of applicants for obtaining higher education in a dual form include:

- success rate;
- the motivation of the acquirer;
- availability of soft skills;
- ability to work in a team;
- professional standard requirements;
- absence of missing classes without valid reasons and other violations.



4th step – *testing applicants for higher education in a dual form.* Within three days after the completion of step 3, with the participation of a representative of the University and a representative of the Business Entity, testing and interviewing of candidates for dual higher education is conducted. Based on the results, a protocol is drawn up.

5th step – *formation of groups of applicants for obtaining higher education in a dual form.* Within one day after the completion of the 4th step, the results of the competition are announced and an order of the rector of the University is issued to study according to the dual form of obtaining higher education.



A2.1.3. Dual Higher Education Model (DHEM) of the P8.Odessa National Economic University Specialty 076 "Entrepreneurship, trade and exchange activity" EP " Entrepreneurship, trade and exchange activity "

1. The scope of application of the dual higher education model

Dual education is a model of cooperation between a university and an enterprise, which includes three active participants who benefit greatly from dual education: the student, the enterprise, and the university.

Host companies can hire future employees trained for their specific profiles.

Higher education institutions are able to modernize their curricula based on the results of cooperation with their partners and use the experience of enterprises to ensure a high level of student education.

Students gain work experience along with their studies and receive a salary.

2. Model aims

- Expanding opportunities for cooperation between enterprises, higher education institutions, and students;
- Increasing students' motivation to study;
- Improving graduates' competencies in accordance with market needs;
- Increasing the relevance of higher education.

3. Model structure

3.1. Integral motivation

Integral motivation (arguments why the chosen educational program corresponds to the dual form of obtaining higher education) includes:

- The need to update university curricula in accordance with market needs;
- Development of professional and social competencies of graduates.

3.2. Organization of the course according to the dual form of obtaining higher education

Organization of the course according to the dual form of higher education (integrated model in the existing educational program or independent model):



- Students who choose dual education will continue their studies according to the curriculum, but will spend more time at the enterprise, where they will have the opportunity to get practical professional training and work experience.

3.3. Distribution of study hours (theoretical and practical) between the university and the partner - an economic agent

The following table shows the distribution of the number of theoretical and practical hours within the framework of the master's program, 64.4% of which are planned to be spent at ONEU and 35.6% - at the enterprise.

	Number of weeks	The structure of study at the university		The structure of training at the enterprise - professional training of students according to the dual form of obtaining higher education through familiarization study visits to partner companies *	
		Number of hours	%	Number of hours	%
1. Semester	18	600	66,7	300	33,3
2. Semester	17	600	66,7	300	33,3
3. Semester	18	540	60,0	360	40,0
Total	53	1740	64,4	960	35,6

*Training Study

3.4. Form of training of students at the enterprise (weekly, monthly, modular)

The distribution of educational/theoretical and practical hours between the university and the enterprise will be organized according to a mixed model.

In the 1st year of study, students will carry out educational activities at the address of the university, spending, in parallel, 3 hours per day / 18 weeks per semester at the enterprise.

In the 2nd year of study, the 3rd semester will be divided into two parts. The first 2 weeks will be represented by interdisciplinary training at the university and the next 7 weeks - by the industrial practice at the enterprise. Completion and defense of qualifying work for 9 weeks - at the university.



3.5. Competency component (what competencies and skills will be developed during student training at the enterprise)

The purpose of the EPP is to train high-level masters who possess fundamental theoretical and methodological knowledge and practical professional skills in entrepreneurship, trade, and stock exchange activities and are able to apply them for the purpose of effective management.

Education under EP provides such competencies:

General competencies (GC)	GC 1. Ability to adapt and act in a new situation.
	GC 2. Ability to identify, pose and solve problems.
	GC 3. Ability to motivate people and move towards a common goal.
	GC 4. Ability to communicate with representatives of other professional groups at different levels (with experts from other fields of knowledge/types of economic activity).
	GC 5. Determination and persistence in relation to assigned tasks and assumed responsibilities.
Special (professional) competencies of the specialty (PC)	PC 1. Ability to develop and implement a strategy for the development of business, trade, and/or stock exchange structures.
	PC 2. Ability to evaluate products, goods, and services in business, trade, and/or stock exchange activities.
	PC 3. Ability to effectively manage the activities of business entities in the field of entrepreneurship, trade, and/or stock market activity.
	PC 4. Ability to solve problematic issues and make management decisions in professional activities.
	PC 5. Ability to initiate and implement innovative projects in business, trade, and/or stock exchange activities.
Programmatic learning results	
PLR 1. Be able to adapt and show initiative and independence in situations that arise in professional activity.	
PLR 2. Identify and analyze the problems of entrepreneurship, trade, and exchange activity and develop measures to solve them.	
PLR 3. Be able to develop measures of material and moral encouragement and use other tools to motivate staff and partners to achieve the set goal.	
PLR 4. Apply business communications to support interaction with representatives of various professional groups.	
PLR 5. To be able to perform tasks in the field of entrepreneurship, trade, and/or exchange activity professionally, in full and with creative self-realization.	
PLR 6. Be able to develop and implement measures to ensure the quality of the work performed and determine its effectiveness.	
PLR 7. Determine and implement strategic plans for the development of economic entities in the field of entrepreneurship, trade and/or stock market activity.	
PLR 8. Evaluate products, goods, services, as well as processes taking place in business, trade and/or exchange structures, and draw appropriate conclusions for management decisions.	
PLR 9. Develop and make decisions aimed at ensuring the efficiency of business entities in the field of business, trade, and/or stock exchange activities.	
PLR 10. To be able to solve problematic issues that arise in the activity of business, trade, and/or	



exchange structures under conditions of uncertainty and risks.

PLR 11. To implement innovative projects in order to create conditions for the effective functioning and development of business, trade, and/or exchange structures.

3.6. Personal component (involved resources from partner companies: learning method, cooperation with the academic environment)

Agreements on cooperation with enterprises of the Odesa region have been signed. It is planned to sign contracts between employers and students.

Employers are annually involved in the discussion of the EPP in the form of questionnaires and holding round tables. As part of the preparation for the piloting of the project on the introduction of a dual form of education, regular meetings of representatives of ONEU (rector, dean of Faculty of Economics and Enterprise Management, head of the department of economics of enterprise and business organization, guarantor of EP) and enterprises (deputy general director, heads of departments) were held in order to agree on the goals of introducing dual education, educational plans, control methods and forms of training at the enterprise.

3.7. Technological component (connection of educational programs, curricula of higher education institutions, enterprises, etc.)

As part of interaction with stakeholders, the content of the EPP "Economics of the enterprise and organization of entrepreneurial activity" is discussed annually with representatives of employers in the format of questionnaires and/or round tables. Based on the results of such discussions, appropriate changes are made to the curriculum, methods, forms of teaching, and the content of work programs, which undergo examination and are approved by the Higher Education Institution.

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availability of soft skills;

ability to work in a team;

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absence of missing classes without valid reasons and other violations.

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5th step – *formation of groups of applicants for obtaining higher education in a dual form.* Within one day after the completion of the 4th step, the results of the competition are announced and an order of the rector of the University is issued to study according to the dual form of obtaining higher education.

RESULTS aimed at improvement:

- 1) Scientific orientation (scientific orientation to solving various real problems of dual education partners through practical activities and scientific works);
- 2) Construction of the educational process;
- 3) Differentiation and personalization of the educational process;
- 4) Completion of a professional and technological internship;
- 5) Development of criteria for personal and professional development of students;
- 6) Systematic coordination and regulation of the educational process.