MULTITRACES

Co-funded by the Erasmus+ Programme of the European Union

METHODOLOGY OF ORGANIZING AND DEVELOPING ON-LINE COURSES WITHIN THE MULTITRACES PROJECT

MULTIDISCIPLINARY TRAINING IN CIRCULAR ECONOMY AND SMART VALORISATION OF THE RURAL AREA

CONTENT

2. SHORT HYSTORY OF ON-LINE EDUCATION

The term “e-learning” was introduced at a Computer-based Training (CBT) seminar back in 1999 (CBT – seen as an interactive instructor-less learning process). However, one of the first instances of online learning in the world can be traced back to 1960, when, at the University of Illinois, USA - students were “self-taught” by using a software system named PLATO. Finally, this experiment ended up by being used in schools throughout the area. Early online learning systems were able only to deliver information to students, but starting with the early 70’s e-learning become more interactive.

New features were added (mail, pools etc) and new platforms were developed since then. Apple II personal computer is released in 1977, having color graphics and sounds, and Apple co-founder Steve Wozniak pointed at education as the primary intended application for it. In 1983 is launched The Electronic University Network, an online educational network which aims to help universities and colleges to utilize online courses. CompuHigh (1994) was the first accredited wholly online high school, and in 1999, Jones International University was the very first fully accredited online university. 2008 marks the debut of the term MOOC (Massive Open Online Course) is used for the first time by Dave Cormier.

One of the biggest online learning platforms , Course era was founded in 2012, having nowadays a lot of competitors like Pluralsight Skills, Edx, Udacity, Udemy Business, Cloud Academy, CBT Nuggets, Khan Academy etc.

3. ONLINE LEARNING IN THE LAST DECADE

Online learning has evolved far beyond its original state, greatly improving its effectiveness. Now it enables students to play an active role in the learning process, with regular feedback and assessments. Some of the features that makes online education important for the future educational system are:

- **Less expensive than traditional teaching methods**: As the cost of teaching lowers, the expenses students have to pay come down which makes online education to become more widespread and economical.
- **Large variety of available courses**: These days, regardless of the subject, online courses have become available covering all areas of social, economic and technological life - from religion to fashion designing, philosophy to commerce, yoga to programming -there is hard to find any field where e-learning is absent.
- **Flexibility**: in terms of money, time, and location. Online learning brings together student and educator regardless of geographical location, in different time zones.
- **Less infrastructure required**: Additional costs are largely minimized, meaning huge incentive to the education providers,
- **Study groups**: Students with the same interests are engaging across the world, sharing information and ideas.
- **Standardized quality**: Reasonable standard of quality can be maintained, since the ubiquitness of content available online can be evaluated and revised any time.

Also, smartphones have played a crucial role in rapidly growing of online learning and making it available to the masses. However, in some cases, individualized education is still difficult to implement to large groups of learners.

4. GENERAL FRAMEWORK

The methodology clarifies the way of organizing and conducting online courses within the MULTITRACES project, in accordance with its general objective: ensuring a modern, multidisciplinary and innovative training of students in the circular economy for the rural environment, in order to promote a new business model based on intelligent utilization of resources. Achieving this goal involves developing students' high-level entrepreneurial knowledge and skills, thus increasing their employability and career development opportunities.

The specific objectives concern:

- modernizing the learning process by introducing innovative methods such as blended learning, ICT and audiovisual tools to ensure the practical training of students in the real economy in an international and national environment through the support of SMEs;
- increasing labor market opportunities for students by creating and implementing multidisciplinary training courses in the circular economy for new business models in rural areas;
- innovative and interactive training for the development of personal skills;
- improving the connection between universities and SMEs regarding the training of students in accordance with the requirements of the labor market.Spre deosebire deci de alte platforme destinate economiei circulare care conțin cursuri deschise, cu caracter general, această platformă abordează aspecte specifice concentrate pe particularitățile socio-geografice ale partenerilor de proiect și pe exemple de bune practici care ar putea fi adoptate în comunitățile locale.

The generated material will be freely accessible to other interested persons to ensure the transferability of knowledge related to the circular economy, also targeting regional and local authorities, Local Action Groups and SMEs, as part of the network that will be developed within the project.

5. ORGANIZATION

The online courses will be organized on the Moodle Platform, managed by the "International Hellenic University" in Greece.

Access to the platform will be secured, and the configuration of rights will take into account the type of user: administrator, teacher, student. The accounts will be created based on these user types and courses and supporting teaching materials will be uploaded to the platform. The evaluation will be scheduled in advance, based on the activities, and the results will be communicated automatically or will be posted on the platform by the evaluating teacher.

All university partners, as users of the eLearning platform, will be involved in this activity, and UHI will lead this activity. They will perform the main tasks according to the agreed schedule:instalarea și configurarea platformei, gestionarea conturilor de utilizator;

- functionality testing, error solving;
- uploading and managing, courses and user guide for tutors and students;
- ensuring maintenance.

The access to the platform will therefore be based on credentials: individual username and password. The accessible sections of the platform will be specific to each account.

For didactic activities, those technical means will be used that guarantee the delivery of information: posting files or links to files, audio-video materials, etc. At the same time, synchronous and asynchronous activities will be combined. Students will be informed in advance about the way of work.Cursurile *online* oferă studenților posibilitatea de a crea rețele și de a dialoga cu alți participanți, împărtășind experiențe specifice țării și bune practici.

The course modules will be accessible to students from bachelor and master programs mainly in the following fields: Engineering and Management, Environmental Engineering, Food Engineering, Biochemical Engineering, Energy Engineering (UBc), Systemic Design/ Food Engineering/ Engineering and Management (POLITO), Departments of Forestry, Business Administration and Electrical Engineering, Technology Innovation and Entrepreneurship (Msc) (UHI), Business Administration, Economics, Chemical Engineering, Material Water and Landscape Engineering, Environmental and Sustainable Chemistry (UA).

Each course module will last 5 weeks with 6 hours per week of individual work. The course will be accompanied by a video presentation of the teacher and the content. Through the e-learning platform, virtual spaces will be developed specifically for communication between students and teachers, tutorial sessions and various approaches will be established on how to guide students in the learning process.

Ways to use learning platforms

Depending on the specific requirements of each activity, learning methods will be used based on certain means or combinations of technical means, so that the learning process is optimally planned and managed. In this sense, there are three work possibilities corresponding to the three online learning systems:

- the synchronous system;
- asynchronous system;
- the hybrid system.

5.1. Synchronous activities

This type of activity is conducted in real time, meaning students engage in the learning process at the same time, coordinated by the teacher, who interacts with them. The need for a well-established timetable is therefore understood. Through direct interaction with students, the teacher can observe their understanding or interest in the subject. At the same time, the teacher can provide additional clarifications related to the discussed topics, increasing the motivation to learn. Students can communicate, which energizes the discussion and leads to mutual knowledge. In addition, they can benefit from the expertise of teachers and specialists in the field, located in different places and yet in the same meeting.

The advantages of this type of learning are given by the ease of interaction, the possibility of group actions, the facilitation of questions and receiving answers, as well as the possibility of instant feedback.

5.2. Asynchronous activities

This type of activity is done individually, as opposed to synchronous learning. It therefore implies a personal schedule, in which the materials are accessed at different times and from different locations. The teacher does not interact in real time with the students, being only the moderator of the group and providing the learning materials, which can be lectures, text files, etc. The advantage of this type of activities is given by

the flexibility of the working time and the extension of the reflection time for a better fixation of knowledge, the repetitive accessing of the material that ensures progress at one's own pace.

However, the lack of direct communication is a disadvantage. The lack of collegial and student-teacher interaction can fuel lack of motivation, especially in the case of poor self-discipline.

5.3. Hyibrid activities

The synchronous methods are direct, programmed, collective, simultaneous and collaborative methods, achieved through direct dialogue, videoconference, telephone, etc., and the asynchronous methods are indirect, intermittent, self-organized, individual, successive methods, carried out by e-mail, blogs, data files , audio-video files. That is why an optimum would be the cross-use of synchronous and asynchronous methods, i.e. the hybrid system, which can improve the quality of the interaction and the learning results. Communication hardware and software tools facilitate this type of learning. An example is the possibility of sharing a virtual whiteboard with all participants in a meeting or screen sharing. In this way, additional explanations can be provided or certain misunderstandings can be clarified. Chat is another example, through which conversation or file sharing is facilitated. The ability to record a session is another feature of learning platforms.

The Moodle platform facilitates learning in a hybrid system, reaping the benefits offered by both systems, synchronous and asynchronous. The open character (open source), the configuration options, the variety of resources, the multiple monitoring and evaluation possibilities make the application used both at the level of education (university and pre-university) as well as by organizations or companies.

6. COURSES

Each of the four specialized courses dedicated to the circular economy in rural areas is the result of the expertise of specialists from partner universities and partner companies. They will explain the specialized notions taking into account the particularities given by the different training of students coming from different study programs.

The lectures and trainers involved will meet with the students once a week for synchronous lessons that will be recorded and uploaded to the Moodle platform so that they can also be followed asynchronously. The modules will be led by the titular lecturers. Tutors can also participate who can intervene at different times during the course and give their own lectures.

In addition, mini-challenges will be organized to put into practice the theoretical notions presented in the courses. The organization of students within these mini-challenges will consist of the formation of mixed work teams. Each team will include students from the four universities involved in the project. They will create a project that validates the acquired theoretical knowledge. The aim is to offer students the opportunity to approach the latest technologies or to seek local know-how to improve the quality of products and the use of by-products and agri-food waste in order to obtain benefits for the economic and social environment.

6.1. „Circular economy in rural territories: principles and working methodologies”

It will be the first of four specialized courses dedicated to the circular economy in rural areas, the circular economy being a current issue, promoted by the EU for sustainable development and environmental conservation. It will take place between the 8th of February until the 14th of March 2021.

The course will consist of three parts:

- the first part aims at providing the basic knowledge of the topic (principles of sustainable development, models and theories about the Circular Economy);
- the second part refers to the systemic design methodologies for evaluating the potential of rural territories in terms of circular innovation (based on the Holistic Diagnosis method developed by S. Barbero in 2017);
- the third part focuses on working methodologies for strengthening the sustainable development of rural territories towards the Circular Economy (including co-design tools, policy-making strategies, systemic design

methods).

The course combines theoretical lectures with technical exercises and the presentation or visit of practical case studies.

The general goal is to build the skills necessary for students to apply the principles and methods presented in the course, aiming to motivate innovation in rural areas to improve the economic, ecological and social sustainability of the local economy. In this sense, the Polytechnic University of Turin will benefit from the support of Agrindustria. The innovative character of the course will be given by the adaptation and application of the principles of the circular economy to the specifics of rural activities.

The proposed structure for the course is:

1. Principles of sustainable developments, models and theories about the Circular Economy;

2. Systemic design methodologies for evaluating the potential of rural territories from the point of view of circular innovation;

3. Work methodologies to increase the sustainable development of rural territories towards the Circular Economy.

At the end of the course, a questionnaire will be included to verify the new skills acquired.

6.2. „New vision with regard to the specific economic activities of the rural environment: by-products valorisation and waste reduction"

It will be the second course of the four specialized courses dedicated to the circular economy in rural areas. It will take place between March 15 and April 18, 2021.

The economic activities specific to the rural environment allow the successful application of the circular economy by capitalizing on by-products and waste from the agri-food sector. In this sense, the course will acquaint the students with the raw materials processing technologies from the rural environment and will present the economic potential of the secondary materials and the cycles in which they can be used so that the waste storage rate approaches zero. The concepts conveyed will give students a new conception of how to develop a technological process.

The innovative character of the course will be given by the inclusion of the latest information regarding the new ways of valorizing secondary products and their use in new manufacturing cycles, applied to specific rural activities. Although the

topic of biotechnologies is treated in many specialized works, there is no collection of technologies and ways of chain valorization of the secondary products included in the process, for the reduction to zero of the stored waste resulting from the economic activities of the rural environment.

The material will be made in English by the teachers from the "Vasile Alecsandri" University of Bacau at a level of knowledge that can be assimilated by students from different specializations.

The proposed content for the course is:

1. Rural territory and specific activities;
2. Waste management and waste management control;
3. Methods of preservation of by-products and food waste;
4. Valorization of by-products from the food industry and biotechnologies;
   - ✓ Valorization of the by-products obtained from the processing of fish, meat and milk;
   - ✓ Valorization of by-products from the processing of vegetables and fruits;
   - ✓ Valorization of bee hive by-products;
   - ✓ Valorization of by-products from sugar, wine, beer and oil technology

6.3. Valorization of plant tissue waste from agriculture and forestry. Sustainable development of the rural area and smart valorization of the natural resources. It will be the third in a series of four specialized courses dedicated to the circular economy in rural areas.

The course will deal with the principles of sustainable development and the European and national provisions in the field. The natural resources of the rural environment (land, forests, waters) must be intelligently exploited and at the same time the available renewable energy sources must be exploited.

The activity will be coordinated by UHI with the support of UBc on specific topics. The two institutions will also collaborate on the case studies, to which the economic partner from Greece will also contribute. The material, developed, will offer a new vision of natural resources, the importance of their exploitation within the limits of regeneration, as well as the indication of new ways of valorizing them. Similar to previous intellectual outputs, the course will be available on the web page and can be used by students from other universities, rural SMEs and other environmental associations.

The proposed structure for the course is:

1. Sustainable development of the rural area and natural resources;
2. Identification of natural resources: agricultural land, forests, water, biodiversity
   - ✓ identification of externalities of natural resources (ecosystem services, risks)
   - ✓ use of resources (products, innovation, entrepreneurship) - Regeneration of resources (sustainability);
3. Forest and water management;
4. Renewable energy sources in the rural environment;
5. The institutional framework (policies, governance);
6. Best practices.

6.4. Business Management in the framework of circular economy

It will be the last course in the series of four specialized courses dedicated to the circular economy in rural areas.

Studies carried out over time have shown that there is a close connection between entrepreneurial skills and the economic development of regions. In this sense, the course will be dedicated to the principles of business management with the aim of imparting the knowledge necessary to initiate and coordinate a business in the rural environment, on the model of a circular economy. The main economic and financial rules, how to make a business plan and what it means to be an entrepreneur will be explained.

The main objective will aim at the formation of a thinking model suitable for an economic activity and, above all, in the economic activity related to the rural environment. Innovative character will be given precisely by the circular economy paradigm, this being a new concept at the European level. Adopting this new way of developing economic activities will ensure sustainable business, performance and also provide significant financial benefits to companies.

The course will be available on the project website and will be accessible to companies and entrepreneurs who are interested in modernizing their business and adopting an integrated vision for their development.Structura propusă pentru curs este:

1. Introduction to business management for the entrepreneur within the circular

economy;

- ✓ The concept of the entrepreneur and the specific condition for the entrepreneur in the circular economy
- ✓ Entrepreneur vs manager
- ✓ The environment in which businesses operate, business conditions in the circular economy framework

2. General management

- ✓ The concept of management. The evolution of management theory.
- ✓ The function of management

3. Making managerial decisions - capitalizing on resources

4. Marketing

- ✓ Marketing concept.
- ✓ The marketing mix
- ✓ The marketing plan

5. Business plan

All study materials will be uploaded to the e-learning platform, through which virtual spaces will be created for communication between students and teachers, tutorial sessions and online mentoring sessions.

Similar to the other results, the generated material will also be open access for other interested persons, which will ensure the transferability of the achievements.

7. SELECTION, STUDY AND EVALUATION

7.1. Prerequisites

The combination of courses offered under the title "Multidisciplinary training in the circular economy and the intelligent exploitation of rural areas for new business models" will have a unique character, not being present in the structure of any of the partner universities.

The topics proposed to be addressed will be based on the results of the opinion survey conducted among economic agents, public institutions and other interested parties, in the previous stage of the project.

The relatively new and complex field of the circular economy, where a broad and multidisciplinary vision is needed, requires persuasiveness, motivation, harmonization of opinions, etc. All this is all the more necessary in the case of the rural economy, where there is also some resistance to change. Simple technical knowledge without the qualities of a leader can lead to failure of a business with promising prospects. The four modules offer a complete training for business entrepreneurs based on the principles of the circular economy, from the rural environment.

All materials will be available on the project website and can be accessed by all interested parties: universities, SMEs, local and regional authorities, agencies or foundations. The course modules will be accessible to students from Bachelor and Master programs, mainly from the following fields: Engineering and Management, Environmental Engineering, Food Engineering, Chemical Engineering, Energy Engineering (UBc), System Design/Food Engineering/ Engineering and Management (POLITO), Departments of Forestry, Business Administration and Electrical Engineering, Technology Innovation and Entrepreneurship (Msc) (UHI), Business Administration, Economics, Chemical Engineering, Material Water and Landscape Engineering, Environmental and Sustainable Chemistry (UA).

7.2. Admittance

The admission session will aim, as far as possible, to enroll 14 students from each university, resulting in a total of 56 students who will be able to participate in online courses. Also, the staff of university partners and SMEs involved in the project will be able to participate in the courses. The selection of students will be carried out in accordance with the general principles presented in the Participant Chapter, encouraging the participation of young people from rural areas and respecting the selection criteria:

1. Letter of motivation explaining the interest in participating in the project - 2 points;
2. The level of knowledge of the English language - 3 points;
3. Previous school results - 3 points;
4. Proven ability to work in teams: participation in other projects, student communication sessions, volunteer actions, activities in student organizations - 2 points.

The selection process will be non-discriminatory. In this sense, the principles guaranteeing equal opportunities for all candidates, regardless of gender, race, religion, nationality, etc. will be respected.

Among the graduating students (all course modules), based on the performance criteria, 8 from each university will be selected to complete the next stage of the project, i.e. training within a partner SME, interconnected with the rural environment.

In the situation where, for various reasons, there are still places available for internships within SMEs, a new admission session will be organized, after which those admitted will go through the materials of the four course modules and pass the final exam, which will it consisted of an online questionnaire using a random selection of topics prepared by each full professor.

The selection will be made by a commission appointed by the decision of the Board of Administration that will analyze the files submitted by the students who wish to participate in the online course. The enrollment files of each student must contain: the writing sheet, the CV, the motivation letter and the self-responsible declaration regarding the school results. Students from different specializations and from different years of study, bachelor's / master's, can be selected for the online course. The evaluation of students will be based on the previously stated criteria.

To participate in the selection process, students will fill out a registration form (annex 1).

7.3. Study

The course will transfer to students the notions, principles and qualities necessary for an entrepreneurial vision, which, through practice and perseverance, can be assimilated and fruitful for a successful career. A good entrepreneur must have the skills of a manager, and the course will focus on interactive management, suitable for young people at the start of their careers. This aspect involves the combination of two characteristics:

- management skills, which are essentially administrative behaviors
- leadership skills/skills that are interpersonal in nature.

The topics that will be proposed within the modules are harmonized and completed in accordance with the results of the survey. Thus, topics such as:

• Leadership - the difference between manager and leader, assessment of the skills and qualities needed to be a good leader, leadership styles, team organization, relationships between values and behaviors.

• Management and motivation - how to improve your employees' skills to improve work efficiency and job satisfaction; learn to support the development and well-being of the people you manage.

• Mediation;

• Mentoring - frameworks and skills needed for effective mentoring; facilitation skills;

• Coaching - how to develop professional and personal excellence;

• Emotional intelligence;

• Communication-attitude, decisions, initiative, change, creating a vision, setting clear agendas.

• Negotiation techniques

The topics addressed will correspond to the profile of an entrepreneur who applies the principles of the circular economy in rural activities. This means harmonizing profit-enhancing views with environmental protection assets and investing in greater resource use.

7.4. Evaluayion

The examination session of each module will be scheduled in the last week of the course, but given the cross-curricular content, all study materials will remain open to students and in case of failure in the first exam, they will be able to review the course content, subsequently having access to other evaluation sessions, until the end date of this activity (in case some students do not pass the exam in the first exam session).

The evaluation will consist of solving a questionnaire, developed by the lecturer in charge of the course. This quiz will be online, delivered on the Moodle platform, using a random selection of topics prepared by each tenured teacher.

The final grade will have two components:

- the grade obtained after completing the online questionnaire (within a percentage chosen by the titular lecturer);
- the grade obtained after the presentation of the project made in the team, in the mini-challenge (within a percentage chosen by the titular lecturer).

The percentages of the two components of the final grade will add up to 100%.

Passing the assessment test of each course will be recognized by a course completion certificate and 1.5 ECTS.

The evaluation test will be scheduled as I specified before, at the end of each module, but there will also be the possibility of organizing other evaluation sessions, until the end date of this activity, the last one being in September.

Completion and completion of all courses with a certificate will provide a total of 6 ECTS.

Following the promotion of the four course modules, the graduate students will complete an evaluation sheet of the way in which each course was organized separately (annex 2).

8. STUDY CASE: ADOPTING ON-LINE EDUCATION AT VASILE ALECSANDRI UNIVERSITY OF BACAU

Starting with 2014, with the implementation of the project "Expanding learning opportunities through innovation, research and interaction with the business environment", POSDRU/156/1.2/G/137623, the specialists of the Faculty of Sciences, the Faculty of Sciences Economic toghether with industry partners contributed to:

• the elaboration of the functional specifications of the collaborative e-Learning platform, for the research activity and self-instruction of the students;

• the development of an infrastructure and a set of collaborative IT applications, based on the Microsoft SharePoint platform, for teaching and research activity;

• the participation in the implementation of technical solutions, installation and maintenance of the data center and Microsoft Windows Servers;

• the management of virtual machines through Hyper-V Manager;

• the administration of the Microsoft SharePoint platform.

One of the notable results was the actual realization of a hardware and software IT infrastructure, presented in figure 1. This infrastructure was later developed by own IT experts for the adaptation of both hardware - upgrade and software, to the new teaching requirements. Thus, the initial approach was continued by creating a new virtual machine on which the MOODLE platform was installed, shown in figure 1.

Screenshot 1
UVAB Data CenterFujitsu Primergy

Screenshot 2
Data Center upgrade – Switches, Gigabit Ethernet Server, optical fiber

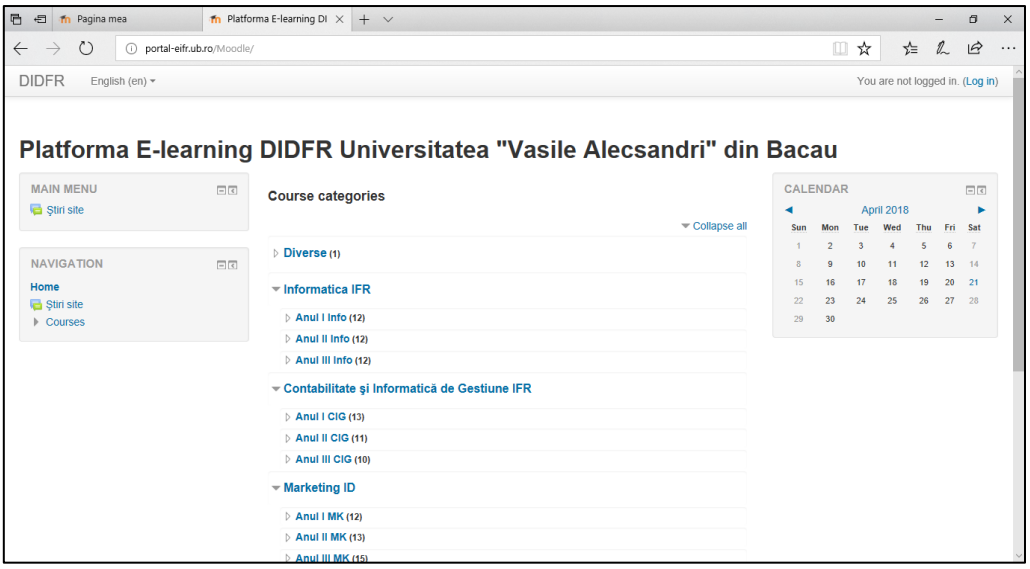

Figure 1. Screeshot MOODLE e-learning app

The results obtained from the configuration, administration and use of the data center materialized through the publication of scientific papers indexed by Thomson Reuters and by participating in prestigious scientific events.

In 2019, this infrastructure was expanded by adding a new server, financed by governmental projects, won by competition. The expansion of the infrastructure is shown in figure 2. Gigabit switches were also added, connected by optical fiber, so that the bandwidth increases to 1Gbps, to improve the access of the students to the resources of the University.

In February 2020, the experience gained in previous projects allowed, together with the specialists of the Faculty of Engineering and the Department of Digital Communications within the University, to outline an institutional plan for the adoption of Office 365 technology and the Microsoft Teams collaborative platform, especially for programs of extramural education.

Thus, what was previously developed on the Active Directory and PowerShell platform has now been transformed to work in the Cloud on Azure Active Directory and Office 365 with enterprise-level licensing. The Teams platform has been used continuously since 2020 as it has proven its effectiveness by working in the Cloud benefiting from permanent updates. The platform was used to ensure the teaching process during the Covid19 pandemic.

Students from all University study programs and teaching staff have been included in Azure Active Directory groups. Each teaching staff constituted a team (Team) for each discipline taught. Usage results are visible through the communication history and the Insights component.

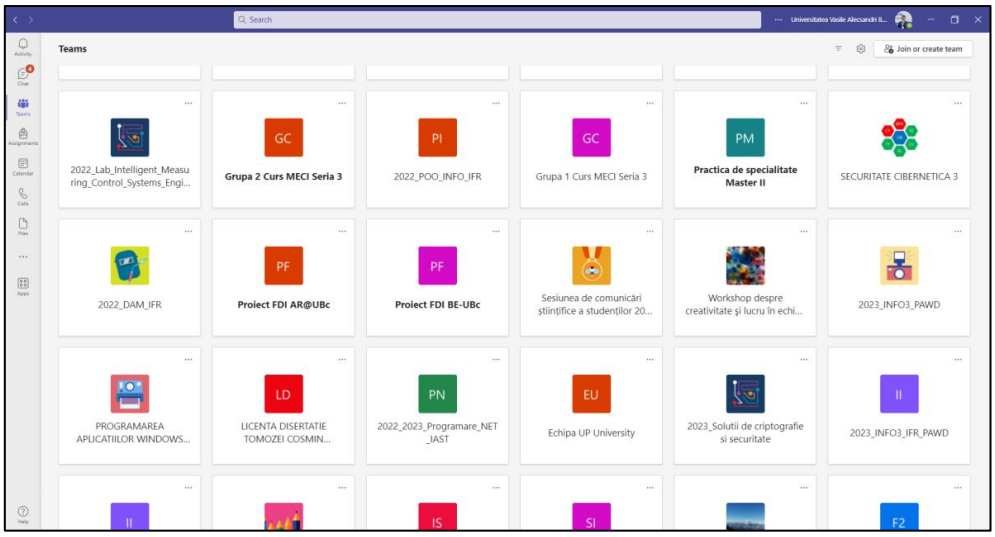

Figure 2. Screenshot Microsoft Teams

8.1. Pedagogical aspects of the implementation of online study

The transfer of know-how, through the discipline Project - Educational Applications :

- This subject was included in the Applied Informatics in Science and Technology master's program, through which master's students are familiar with building educational applications, on SharePoint and MOODLE platforms. The applications made by students can be starting points for the diversification of didactic activities. A permanent feedback was sought from the graduating master's students, regarding the opportunity/necessity of adopting new solutions. Students participated in national or European research and development projects.
- Students benefited from being included in target groups within these projects. Counseling sessions and professional development workshops were developed in projects like “Innovative Strategies for Counseling and Career Guidance” project. The team of IT experts made up of teaching staff of the Faculty of Sciences has developed a SharePoint platform for VideoCVs, On Premises and Cloud variant (figure 3).
- The ROSE Partener project involved the creation of the Learning Center for the students of the "Vasile Alecsandri" University of Bacău - PARTENER and ensuring its functionality through counseling and training programs centered on the student, as a support mechanism for students at risk of dropping out of university or not being promoted, in first year of undergraduate studies. The students of the IFR Informatics study program were part of the target group. The project fully met its stated objective, significantly reducing school dropouts.

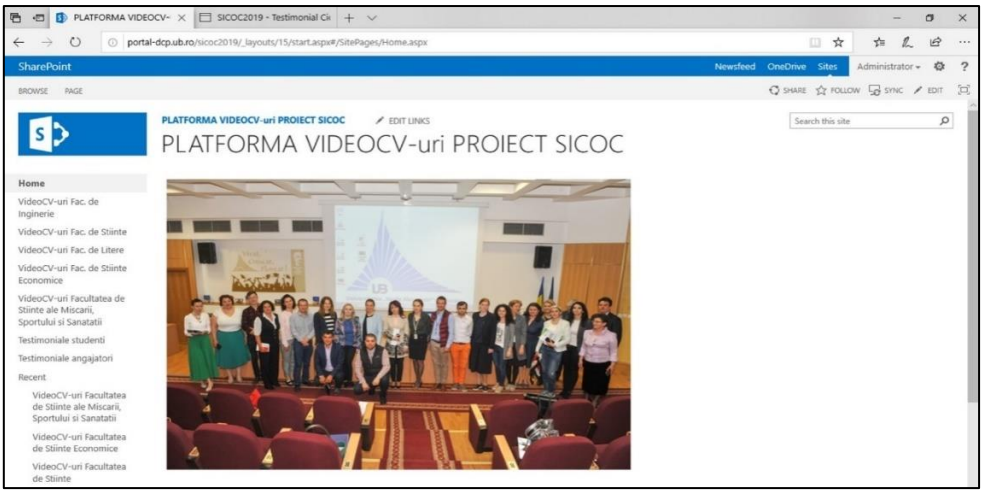

Figure 3. SharePoint On Premises platform for VideoCV's

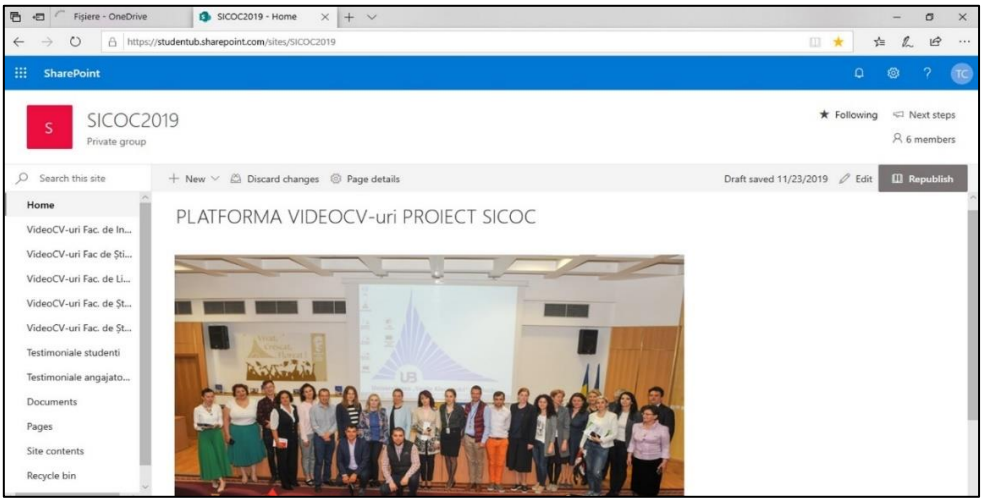

Figure 4. CloudSharePoint platform for VideoCV's

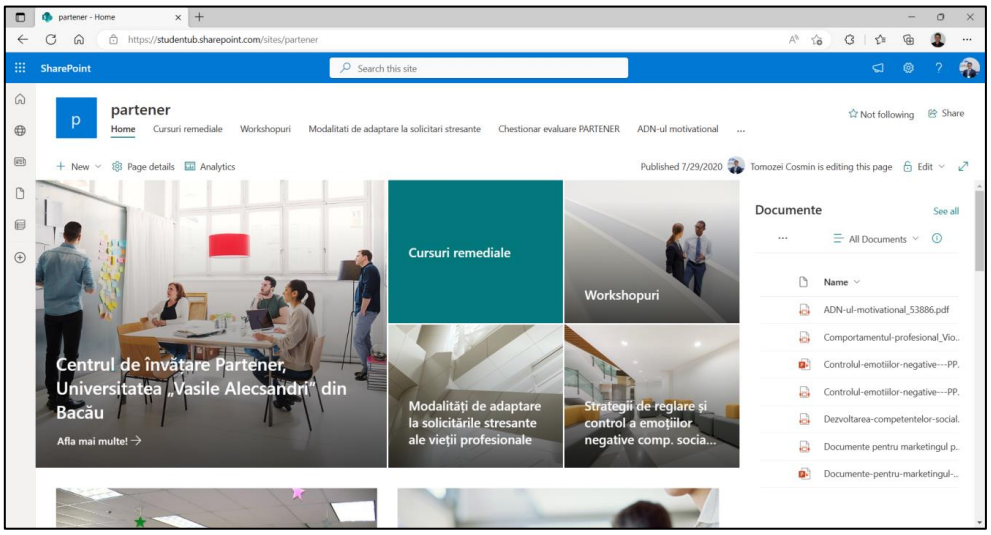

Figure 5. Screenshot – SharePoint: Partener learning center

8.2. Future developments

In the 2023-2025 period, through the national recovery and resilience plan project won through the competition, we will develop further learning competencies and practical skills, by purchasing augmented and virtual reality laboratory equipment and technologies to develop research and innovation. The laboratory will carry out scientific research in these directions, with results applied in the educational process, the Project was won in 2022 and activities are already underway to develop the infrastructure and programs of the "Vasile Alecsandri" University of Bacău in general and the Faculty of Sciences in particular by improving the digital infrastructure, supporting and improving teaching and research-development and digitalization activities, developing the university's skills to become a "hub" for the development of digital skills in the Romania's North-East Region.

9. ANNEXES

Anexa 1. - REGISTRATION FORM

REGISTRATION FORM

Complete only in block letters

I, the undersigned

Personal data

Name, father's initial and first name _____, national personal number: _____, IC: Series ___, No. _____, Issued on _____, by _____, Marital status _____, Nationality: _____, Citizenship: _____, Date of birth: _____, City: _____, Country _____

Address during college

County _____, Locality _____, Street _____, No.__, Mobile phone _____, e-mail: _____

Student at _____

Faculty_____, specialisation _____, year____, group _____

would like to apply for the international online course: ***Multidisciplinary training in circular economy and smart valorisation of rural area for new business models***, organized within the MULTITRACES project, ID 2019-1-RO01-KA203-063870.

I understood all the criteria for participation in this project.

I, the undersigned _____, agree that the .....University to process my personal data within the MULTITRACES project.

STUDENT,

...

Date,

...

Signature,

///

Annex 2. - STUDENTS' EVALUATION

STUDENTS' EVALUATION

of the module no….

CIRCULAR ECONOMY IN RURAL TERRITORIES: PRINCIPLES AND WORKING METHODOLOGIES

Evaluation of the students' activity is an essential part for improving the quality of the educational services process.

All the responses will be considered as confidential and will be processed by the project coordinator. The opinions expressed will be used to improve teaching.

A. COURSE MODULE ATTENDANCE

1. To what extent did you attend the course?

Teaching activity	75%-100%	50%-75%	25%-50%	0%-25%	Not at all
Course (C)					

2. How many hours did you allocate per week for individual study in this course module (doing homework, documentation, learning)?

>6 hours	<6 hours	<4 hours	< 2 hours	< 1 hour

B. COURSE MODULE ORGANIZATION

For each statement, choose from the evaluation scale the grade that best express your opinion.

ITEMS	DEGREE OF SATISFACTION			
	Unsatisfactory	Satisfactory	Good	Very good
1. Course organization (planning of lessons, activities, meetings with the students)				
2. Clear presentation of the content				
3. Consistency of the information presented (there are enough explanations/arguments to sustain the course topics)				

4. Examples and materials used (presentations, case studies, video presentations, course available on the Moodle platform and others)				
5.Teachers' interest in the students' degree of understanding				
6. Encouragement of students for active participation and free expression				
7. Teachers' communication with students (providing feedback to students' questions/ attitude towards students)				
8. Teachers' willingness to provide students with additional help as needed (learning resources, video-lectures, course support, bibliography, etc.)				
9. Students were clearly informed in advance about the evaluation criteria and procedures.				
10. Organization and coordination of the practical activities: mini-challenges, projects, essays				
11. Clarity of work requirements formulation for the practical activities				
12. Teachers' willingness to provide additional support to the students for the successful development of their practical activities				
Overall assessment of the course module organization				

C. COURSE MODULE CONTENT

Your perception of the below statements is:

	ITEMS	ASSESSMENT			
		Disagree	**Partially Disagree**	**Partially Agree**	**Agree**
1	The content of the course module has an adequate degree of difficulty, considering the students' background of study				
2	The course subject raised my interest to further enrich my knowledge in the field.				
3	Collaboration with students from other specializations has been enriching				
4	Learning about topics other than my subject studies is useful for my future.				
Overall, I am satisfied with this learning experience					

Annex 3. Feedback Questionnaire

Feedback Questionnaire

A. Please rate your experience during the practical activity at:
University .....
Company.....
answering to the following items with a mark from 1 to 5 (where 1=the lowest, 5=the best). For some items, the mark shows your compliance with the affirmation (1=least concordance, 5=total concordance).

		1	2	3	4	5
1.	How would you rate the organization of the traineeship?					
2.	The mobility duration was long enough to allow the achievemnt of its goals.					
3.	How do you appreciate the communication with the professors at the university ?					
4.	How do you appreciate the integration with the other colleagues?					
5.	You had the occasion to know specialists and work processes, that could be helpful for your professional development.					
6.	In what degree you think that the company you visited was ready to open to innovation?					
7.	In what degree you think that the mobility you performed will be helpful for you, in the future?					
8.	Please assess the experience from the intercultural point of view: communication on other topics, events, trips, etc.					
9.	Did this experience improve your language skills?					
10.	How would you rate the accomodation and other services you benefited from?					
11.	In what degree the Erasmus grant covered the expenses you had during your stay abroad ?					

B. Which of the following factors motivated you to participate?

	Academic
	Cultural
	Plans concerning my career
	A new environment

☐ An European experience

Others (please specify):

C. Please share with us impressions on your experience during the practical training .

D. Could you offer some advice for future participants?

Thank you for joining MULTITRACES!

Annex 4. Report concerning the activity within the international online course

REPORT

concerning the activity within the international online course

Multidisciplinary training in circular economy and smart valorisation of rural area for new business models

Course module no. (1-4):

Title of the module and the university which delivered this module

Teachers:

1. Summary of the course module.

- General objective of the discipline:
- Specific objectives:
- Competences assured by the module, **connected with circular economy**:

2. Content of the module (*put here the topic of your course, chapters and subchapters*)

Course

1. Introduction
2. Definition of sub products
   2.1 milk subproducts
   2.2
3. Etc.

Project/ mini challenge:

1. explain in some words the goal of the mini-challenges / projects;
2. subjects proposed.

Underline the contribution of the SME, if this is the case

Bibliography (*if you gave additional bibliographic titles to the students*) – *main titles*

3. Presentation of the teaching learning activities within the course: how did you conduct the activities with the students*: (use what format you want but please present the bellow information)*

- duration from …to… (day and month)
- the teachers involved;
- the materials assured to the students and where these materials can be found (Moodle. ppt presentations, You Tube, put the link to these pages or a print screen images),
- the needed hours of student work (to justify the number of ECTS given to the students), including the working hours for project;
- how often did you meet with the students and the platform used; put here the link or print screen image, if you have it;
- additional information (*present your interaction with the students by emails or whatsapp, etc. –if this was happened).*

3. Students involved:

- number of students enrolled in your module
- condition for students to pass the exam,
- the examination sessions and a short explanation concerning the supplementary number of exam sessions
- type of subjects for exams –give some examples
- number of the graduated students.

5. Table with the enrolled students and final results

Nr.	Name surname	University of origin	Country	Final result
				passed or failed the exam

6. Conclusions

Write here some conclusions: what went well, what went wrong, overall conclusion

Lessons learned – advice for other similar activities

It would be better that each report to be as close as possible to 10 pages. More pages would be even better.