WP5-A6. Pilot RockChain Course implementation for HE students and teachers related to mining.

"Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or the European Education and Culture Executive Agency (EACEA). Neither the European Union nor EACEA can be held responsible for them."

Contents

1. INTRODUCTION

This report describes the pilot RockChain course implemented in Romania as part of WP5, targeting adults over 45 years old from higher education environments, including teachers and learners involved in mining, construction and related technical fields. The pilot activity served to test and validated the coherence and usability of the outputs developed in earlier stages of the project: the curriculum (WP2), the training materials and e-Handbook (WP3) and the interactive RockChain digital tool (WP4). The course combined theoretical concepts with practical demonstrations to evaluate both the pedagogical content and the functionality of the IT application.

The event was organized at the GREEN CENTER Building, Str. Brândușelor 74, Brașov, a venue managed by the Foundation for Professional Training and Pre-University Education – Viitor and selected for several reasons. The location is regularly used for adult and professional training, offering a suitable environment for lifelong-learning activities. The building provides easy access for participants, appropriate classroom facilities and stable technical infrastructure, including high-speed internet and multimedia equipment, necessary for the digital testing of the RockChain application. Its neutral, non-academic setting also supported the objective of engaging adult learners with diverse professional backgrounds.

Promotion of the pilot course was carried out through a combination of online and direct communication channels to ensure broad visibility. Announcements were published on the Faculty of Civil Engineering website, both in the News & Events section (https://constructii.unitbv.ro/ro/stiri-si-evenimente/570-seminar-si-curs-pilot-in-cadrul-proiectului-rockchain.html) and on the dedicated RockChain project page (https://constructii.unitbv.ro/ro/cercetare/rezultatele-cercetarii/rockchain.html). Additional visibility was provided through the FPIP–Viitor website (https://www.calificat.ro/detalii-noutate/2025-10-20/seminar-rockchain.html), which hosts regular updates on training activities. A series of emails were sent to private companies in the construction sector and to local administrative institutions to encourage participation from professionals. Furthermore, dissemination was supported through WhatsApp messages shared with targeted groups, including professionals active in the construction and stone-processing fields.

2. PILOT COURSE IN BRASOV

2.1. Agenda

The pilot course followed the agenda below, covering two hours of interactive training:

09:00 – 09:15 – Registration of participants
09:15 – 09:30 – General introduction to the RockChain project (UNITBv)
09:30 – 09:45 – Introduction to the natural stone industry for construction (UNITBv)
09:45 – 10:15 – Overview of Blockchain technology, circular economy principles, and waste-management practices in the stone sector (UNITBv, CTM & FPIP)
10:15 – 10:45 – Demonstration and testing of the RockChain application (CTM)
10:45 – 11:00 – Open discussions and conclusions
11:00 – Closing of the pilot course

TRANSVERSAL TECHNOLOGICAL SKILLS FOR THE ORNAMENTAL ROCK INDUSTRY FOCUSING ON THE APPLICABILITY OF BLOCKCHAIN IN A CIRCULAR ECONOMY
2023-1-DE02-KA220-ADU-000166863

Co-funded by the European Union

Agenda evenimentului

Curs pilot în cadrul proiectului RockChain

IMPLEMENTAREA TEHNOLOGIEI BLOCKCHAIN ÎN MANAGEMENTUL DEȘEURILOR DIN PIATRĂ PENTRU CONSTRUCȚII

29 Octombrie 2025

9.00 - 11.00	**Locație: Clădirea GREEN CENTER, Str. Brânduşelor nr. 74, et 2, Fundația pentru Formare Profesională și Învățământ Preuniversitar - Viitor**
9:00 - 9:15	Primirea și înregistrarea participanților
9:15 - 9:30	Informații generale despre proiect (UNITBv)
9:30 - 9:45	Introducere în industria pietrei naturale pentru construcții (UNITBv)
9:45 - 10:15	Noțiuni generale despre tehnologia Blockchain, economie circulară și managementul deșeurilor (UNITBv, CTM, FPIP-Viitor)
10:15 - 10:45	Testarea conceptelor cu ajutorul aplicației RockChain (CTM)
10:45 - 11:00	Discuții libere și concluzii
11.00	Închiderea evenimentului

Public țintă: Profesioniști din sectorul construcțiilor, profesori din școli profesionale / instituții de învățământ superior / centre tehnologice, precum și asociații și organizații non-profit, entități din administrația locală / centrală.

Taxe: Participarea este gratuită

DNV · Centro Tecnológico del mármol, piedra y materiales · Universitatea Transilvania din Brașov

Consortium members: Deutscher Naturwerkstein-Verband e.V. (DNV), Asociación Empresarial de Investigación Centro Tecnológico del Mármol, Piedra y Materiales (CTM), Universitatea Transilvania Din Brasov (UNITBv), Klesarska skola (KSK).

Figure 1: Agenda of the pilot course.

The registration of the participants was done on the spot by the individual registration on a list previously prepared according to the attached model.

2.2. Course content

The course introduced participants to the main thematic components of the RockChain training framework:

- Overview of the project goals and expected impact in the stone and construction sectors
- Structure and key elements of the RockChain curriculum (WP2)
- Practical insights from the e-Handbook on circular economy strategies for stone-waste management (WP3)
- Basic concepts of Blockchain and its applicability in traceability, transparency, and waste-management workflows
- Integration of environmental and digital-transformation perspectives
- Guided demonstration of the RockChain digital tool (WP4), followed by hands-on testing

Participants engaged in short discussions on how digital solutions can support sustainable practices in industries related to stone extraction and processing.

Figure 2: Picture.

Figure 3: Picture.

Figure 4: Picture.

Figure 5: Picture.

2.3. Attendance

The pilot training session brought together a diverse group of professionals, students, and representatives from both public institutions and private companies active in the construction sector. Attendance covered multiple categories relevant to the RockChain Project, civil engineering, construction management, public administration, geological works and education, which contributed to a broad exchange of perspectives during the activities.

Finally, 21 people participated, represented a wide range of institutions and organizations, including:

- Public institutions and educational organizations: Municipality of Sibiu city, Secondary School Tina–Livezi (Vâlcea County), County Emergency Hospital Vâlcea and Technological High School “Victor Jinga” Brasov.
- Private companies in construction, engineering and related fields: Hidroconstruct S.A., Foraje Speciale S.A., STRABAG SRL, Eco Plant Agro Construct

SRL, Terra Building, SC Andra Zah Building, SC Gemina Building SRL, SC Simbioza SRL, SC Vialis Engineering SA, and Webuild.

- Individual professionals and independent enterprises: I.F. Dumitru Costel Ionel, Pârvu Dragoș, and Stănică Costin.
- VET organizations: FPIP Viitor.

This composition ensured that the pilot course benefited from multidisciplinary input, while also validating the relevance of the RockChain training materials for both practitioners and institutional stakeholders.

3. QUALITY ASSESSMENT

At the end of the session, participants completed an evaluation questionnaire designed to assess:

- Relevance and clarity of the course content
- Quality and usefulness of learning materials
- Usability and pedagogical value of the RockChain tool
- Trainer performance and overall organization
- Suggestions for improvement

3.1. EVALUATION QUESTIONNAIRE

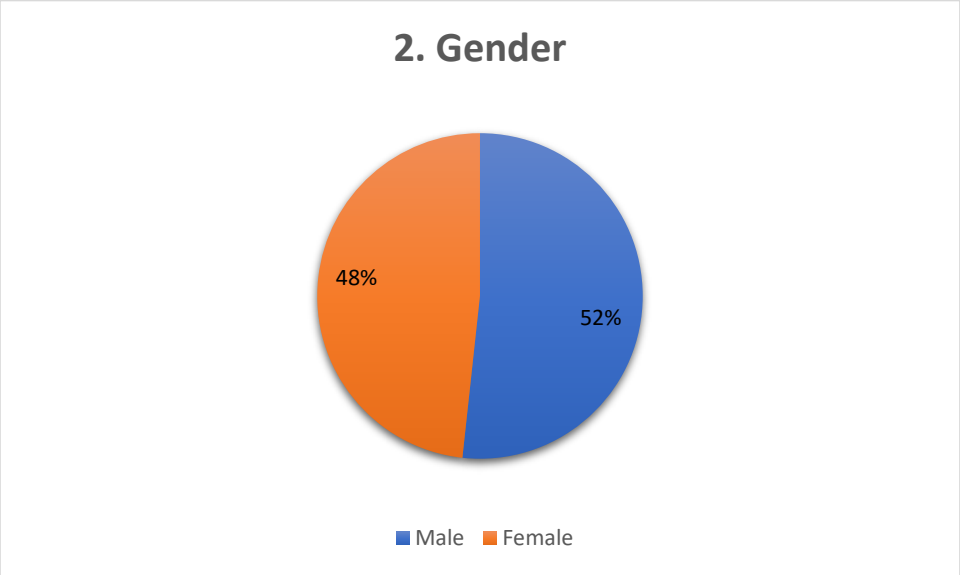
Finally, 21 participants attended this pilot course, but a total of 29 surveys were completed, as some of the UNITBv teaching staff also took part.

3.2. RESULTS OF THE QUESTIONNAIRE

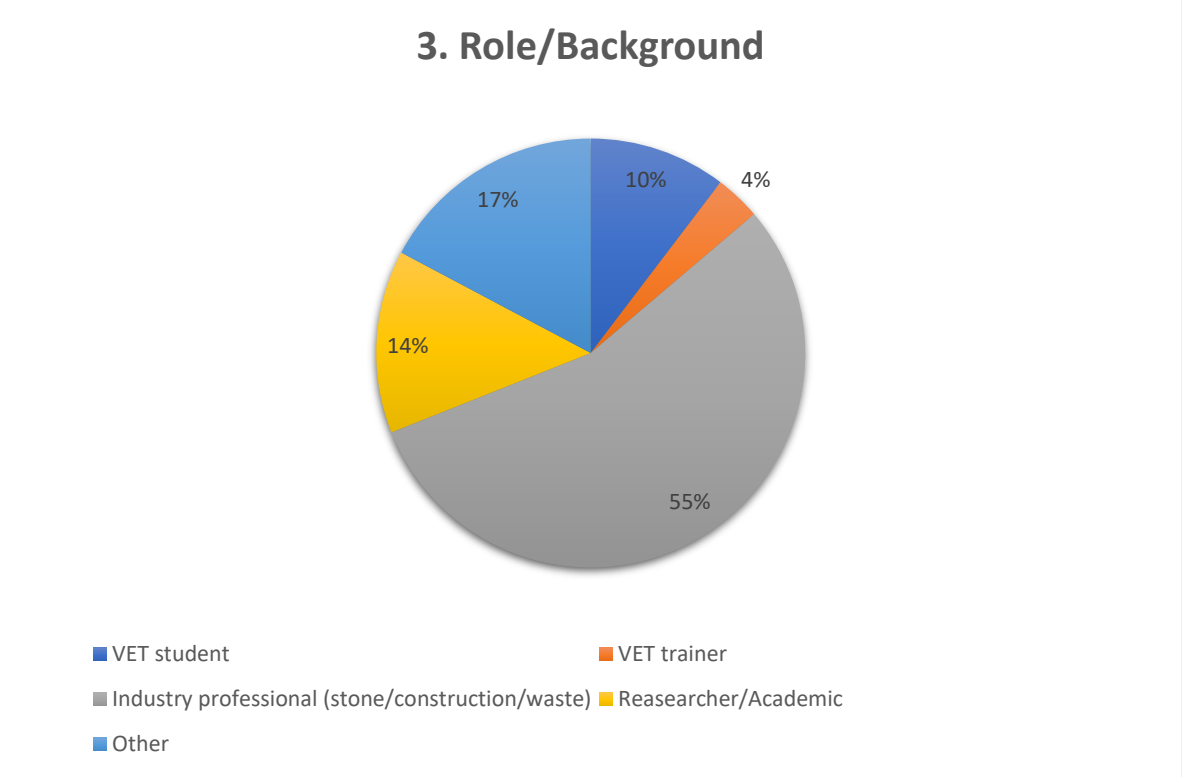
1. Where did you assist to the course?

100% from Romania.

2. Gender



3. Role/Background



4. How did you attend to the course?

100% in person.

5. Previous familiarity with blockchain and circular economy

Average: 2,66/5

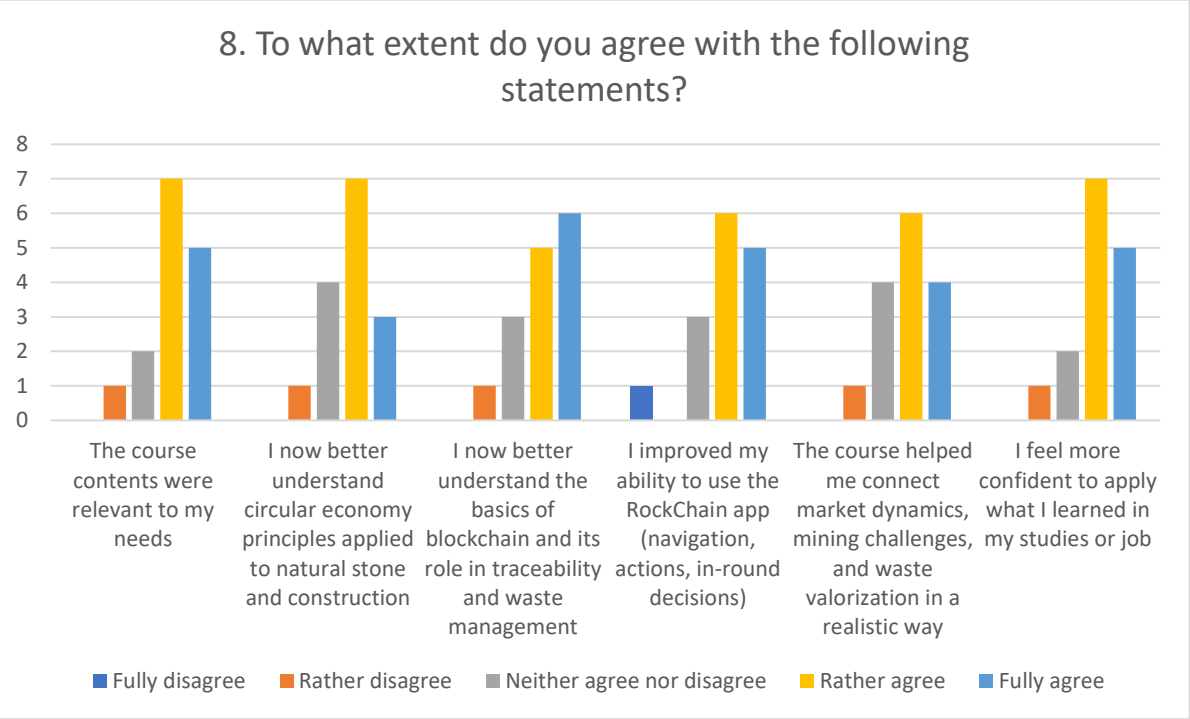
6. Overall, how satisfied were you with the training activity?

Average: 4,62/5

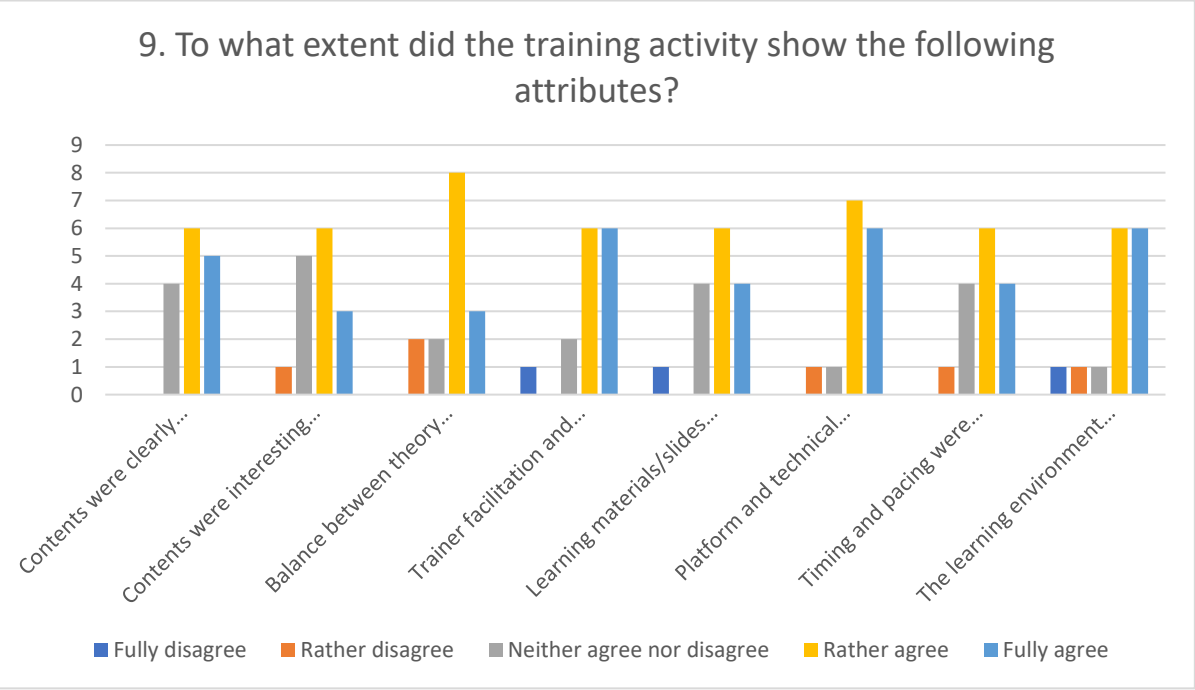
7. Would you recommend this pilot activity to your colleagues or classmates?

Average: 4,69/5

8. To what extent do you agree with the following statements?



9. To what extent did the training activity show the following attributes?



10. Usability of RockChain app during the course

Average: 4,21/5

11. How clear were the in-app round mechanics (timer, market, mining, recycling)?

Average: 8,79/10

12. What aspects of the activity did you find most interesting?

More information in the conclusions.

13. Where could it be improved?

More information in the conclusions.

14. Do you have any additional comments, suggestions or opinions about the pilot activity?

More information in the conclusions.

4. CONCLUSIONS

The pilot RockChain course provided a practical opportunity to test the integrated outputs of WP2 (curriculum design), WP3 (training content) and WP4 (digital tool and app) with a target group representing experienced adults in higher-education learning environments. Overall feedback confirmed that the learning pathway is coherent and relevant, and that the combination of theoretical grounding (sector context, circular economy and blockchain fundamentals) with digital demonstration and hands-on interaction supports understanding and engagement, even for participants with diverse prior familiarity with the topic. The activity also served as a useful “stress test” of the RockChain OER usability, highlighting what works well in real delivery conditions (clarity of the unit sequence, practical examples, interactive discussion) and where trainers may need additional support (more time for practice, clearer guidance for in-app workflows and traceability logic, and stronger links to real-life cases).

Based on the collected evaluation data and qualitative comments, targeted adjustments will be implemented before the final international seminar and the public release of the full RockChain OER, focusing on fine-tuning content emphasis, improving practical assignments, and incorporating participant-driven suggestions to strengthen transferability to everyday teaching and training contexts.

In general, participant feedback was clearly positive and constructive. Learners particularly appreciated the interactive nature of the session and the way the course connected sustainability and circular-economy challenges with concrete digital traceability solutions. At the same time, comments consistently pointed to opportunities to strengthen the practical dimension—mainly by allowing more time for hands-on activities, adding additional real-life examples, and providing clearer guidance on how the methods and tools introduced in the pilot can be replicated in everyday teaching and training settings.