

# Educational Transformation for the 21<sup>st</sup> Century - EduTrans21



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**COLEGIUL TEHNIC ENERGETIC SIBIU**



Educational institution:  
**Energetical Technical College Sibiu**

ERASMUS+ Project  
**EduTrans21 (Educational Transformation for the 21st Century)**

Title of the project:

**„ENERGETIC I-NETWORK-  
Creating Sustainable Network for Digitization”**

Integrated within EduTrans21 Project

Period: **December 2023 – June 2024**



## APPLICATION FORM

Approved,  
Principal

### A. INFORMATION ON THE APPLICANT

Name of the applying educational institution:	Energetical Technical College Sibiu
Full Address	Str. Electricienilor Nr. 1, 550311, Sibiu, Romania
Phone number/ Fax.	Tel: 0040.269.244.351; 0040.731.359.645; Fax: 0040.269.213.901;
Website and e-mail address	sibiuenergetic@yahoo.com; www.energeticsibiu.ro
Coordinators	Prof. PhD. Volosciuc Sorin Dan Prof. Stoica Marius
Number of teachers involved in the project:/ total number of teachers in the school	5
Number of students involved in the project	25
Other programs/ projects organized	EduTrans21

### B. INFORMATION ON THE PROJECT

B.1. Title of the project: „ENERGETIC I-NETWORK - Creating Sustainable Network for Digitization”

B.2. Type of main activity within the project: student project

B.3. The field in which the project falls: Trans-disciplinary

B4: Edition no.1

B5: Number of participants to the project: approx. 25 students from Energetic Technical College Sibiu

B6: The budget of the project:

Total budget	Own contribution/ other sources
60.000 Lei	60.000 Lei

B7: The project is with direct/online participation

### C. SUMMARY OF THE PROJECT

The project aims to create an Internet network in all the classrooms and laboratories in the school, helping to digitize the educational process in the school and ensuring an adequate framework for the implementation of awareness activities for sustainable development actions that can lead to the fulfilment of the 17 Sustainable Development Goals (SDGs) set out in the UN 2030 Agenda. In other words, the communication infrastructure inside the college is being developed.

The project also aims to develop trans-disciplinary educational activities, which include various concrete actions regarding the Sustainable Development Objectives.

**a. Number of students and teachers involved:** This project involves around 25 students and 5 teachers.

**b. Direct beneficiaries:** the participating students.



**Indirect beneficiaries:** teachers, other students, local community, partner companies.

**Suggested activities, in the order of their occurrence:**

1. Presentation of the Agile and Scrum technique used to carry out the project.
2. Distribution of work tasks in the project and optimization of working time.
3. Creating a course on the school's Classroom platform, where students will upload the assignments from the project in digital format.
4. Presentation of the 17 Sustainable Development Goals (SDGs) provided for in the UN 2030 Agenda. (<https://www.euractiv.ro/we-develop/ce-reprezinta-cele-17-obiective-de-dezvoltare-durabila-odd-include-pe-agenda-2030-6402>)
5. The realization by the students of some activities that include various concrete actions within the project.
6. Carrying out a study following the application of questionnaires on improving the quality of life in our school community.

**c. Description of the main activity**

The main activity is the realization of projects with the students using the AGILE method. The projects have as their theme specific works for the realization of an Internet network in all the classrooms and laboratories in the school, helping to digitize the educational process in the school and ensuring an adequate framework for the implementation of activities to raise awareness of actions for sustainable development.

**d. The estimated educational impact on the target group**

The project will prove its usefulness in class, helping to increase students' project development skills. The main benefits for students will be:

- Digital learning and improving digital skills
- Responsibility and adaptability;
- Critical thinking and systemic thinking;
- Analysing, accessing, managing, integrating, evaluating, and creating information in various forms and environments;
- Familiarizing students with the UN Agenda 2030 regarding the Sustainable Development Goals SDG game (bookwidgets.com)
- Demonstrating teamwork and leadership skills; adapting to various roles and responsibilities; productive collaboration with others; empathic behaviour; respecting other points of view
- Improving students' skills in using computer technologies.

**D. PRESENTATION OF THE PROJECT**

**D.1. Argument, rationale and context**

The education system must really prepare the student for adult life, developing the key skills that can ensure his social success. We are mainly referring here to collaboration, teamwork, adaptability, critical thinking.

Taking into account the technology and the use of computer systems in all fields and starting from the fact that our high school has classes specializing in telecommunications, we consider it important to design a project that would value and benefit from the knowledge obtained during high school.

One of the objectives of the EduTrans21 international project, implemented in our school, is to familiarize teachers and students with the AGILE/SCRUM project management technique.

Also familiarizing students with the Sustainable Development Goals proposed on the UN 2030 agenda is one of the trans-disciplinary themes we propose through this project.



## D.2. Aim of project

The purpose of the project is the development of educational activities that include various concrete actions regarding the Sustainable Development Objectives, i.e. the creation of an integrated Internet network throughout the school.

## D.3. The specific objectives of the project

- O1. Implementation of AGILE/SCRUM techniques in the realization of school projects
- O2. Using online Classroom platforms
- O3. Realization by the students of specific activities within the project.
- O4. Creating an integrated internet network in the school buildings
- O5. Carrying out a study following the application of some questionnaires regarding the improvement of the quality of life in our school community.

## D.4. Description of the target group to which the project is addressed

The project is addressed to students from the 12th grade C, high school education, from the Sibiu Energetic Technical College.

## D.5. Direct and indirect beneficiaries

Direct beneficiaries: students

Indirect beneficiaries: students, parents, local community, partner companies.

## D.6. Duration of project

Period: December 2023 – June 2024

## D.7. Detailed description of the project

### ACTIVITY 1

**a. Title of activity:** Presentation of project. Organizational activities.

**b. Date:** 19 December 2023

**c. Place:** Sibiu Energetic Technical College.

**d. Participants:** Students from Sibiu Energetic Technical, 12th grade C

**e. Brief description of the activity:**

The ENERGETIC I-NETWORK project integrated within the EduTrans21 project is briefly presented to the students involved.

Students are also introduced to the AGILE/SCRUM technique used for the realization of projects.

For easier communication within the project, a course will be created on the school's Classroom platform, where students will receive an invitation to register.

Students will be divided into teams for the activities to follow.

**f. People in charge:** Prof. PhD. Volosciuc Sorin Dan, Prof. Stoica Marius

**g. Beneficiaries:** Students from pre-university education, teachers

**h. Assessment methods:** educational platform

### ACTIVITY 2

**a. Title of activity:** Internet network in the main school building and installation of cameras in classrooms



**b. Date:** January- June 2024

**c. Place:** Sibiu Energetic Technical College/ online platform

**d. Participants:** the students involved in the project.

**e. Brief description of the activity:**

- Implementation of a structured voice-data network in the school building – P -- network design
- Execution of a structured voice-data network in the school building – P -- budget calculation
- Implementation of a structured voice-data network in the school building – P -- calculation of the telephone network
- Implementation of a structured voice-data network in the school building – E1 -- cable channel installation technology
- Execution of a structured voice-data network in the school building – E1 -- laying the cables
- Implementation of structured voice-data network in the school building – E1 -- identification and establishment of network routes
- Implementation of structured voice-data network in the school building – E2 -- identification and labelling of cables
- Implementation of a structured voice-data network in the school building – E2 -- installation of cable network plugs, installation of network sockets
- Implementation of a structured voice-data network in the school building – E2 -- testing the network circuits created
- Implementation of CCTV network – IP video cameras in the classrooms of the school building – P -- POE power supply technology of the video cameras
- Implementation of CCTV network – IP video cameras in the classrooms of the school building – P – choosing the place for the installation of the video cameras – the parameters of the video cameras
- CCTV network execution – IP video cameras in the classrooms of the school building – P -- parameterization of the video cameras / allocation of IP addresses,
- CCTV network execution – IP video cameras in the classrooms of the school building – E1 – video camera assembly work/ network connection execution
- Implementation of CCTV network – IP video cameras in the classrooms of the school building – E1 -- installation of digital NVR recorder – parameters of digital NVR recorder
- Implementation of CCTV network – IP video cameras in the classrooms of the school building – E1 – HDD installation in NVR digital recorder – HDD parameters
- Implementation of CCTV network - IP video cameras in the classrooms of the school building - E2 - use of software applications in monitoring the CCTV network
- Implementation of CCTV network - IP video cameras in the classrooms of the school building - E2 - calculation of HDD storage capacity
- Implementation of CCTV network – IP video cameras in classrooms in the school building – E2 -- design of CCTV network – choice of components
- Implementation of structured voice-data network concentrator in the school building -- design of the concentrator
- Implementation of structured voice-data network concentrator in the school building -- crimping the cables in the patch panel
- Implementation of structured voice-data network concentrator in the school building -- interconnection of concentrator equipment

**f. People in charge:** Prof. PhD. Volosciuc Sorin Dan, Prof. Stoica Marius

**g. Beneficiaries:** Students from pre-university education, teachers

**h. Assessment method:** Network usage





### ACTIVITY 3

- a. Title of the activity:** Works on the realization of the voice-data network on optical fiber between the school building and the workshop building
- b. Date:** January-June 2024
- c. Place:** Sibiu Energetic Technical College/ online platform
- d. Participants:** The students involved in the project
- e. Brief description of the activity:**
- Execution of voice-data network on optical fiber between the school building and the workshop building - communication via FO/ execution of FO welding
  - Implementation of voice-data network on optical fiber between the school building and the workshop building -- installation of media converters
- f. People in charge:** Prof. PhD. Volosciuc Sorin Dan, Prof. Stoica Marius
- g. Beneficiaries:** Students from pre-university education, teachers
- h. Assessment method:** Network usage

### ACTIVITY 4

- a. Title of the activity:** Internet network setting up in the workshop building
- b. Date:** January- June 2024
- c. Place:** Sibiu Energetic Technical College/ online platform
- d. Participants:** The students involved in the project.
- e. Brief description of the activities:**
- Implementation of a structured voice-data network in the workshop building -- identifying and establishing network routes
  - Implementation of structured voice-data network in the workshop building - practical realization
  - Implementation of structured voice-data network in the workshop building -- cable channel installation technology
  - Execution of a structured voice-data network in the workshop building -- installation of telephone terminals
  - Implementation of structured voice-data network concentrator in the workshop building -- equipment selection
  - Implementation of structured voice-data network concentrator in the workshop building -- integration of the telephone network
- f. People in charge:** Prof. PhD. Volosciuc Sorin Dan, Prof. Stoica Marius
- g. Beneficiaries:** Students from pre-university education, teachers
- h. Assessment method:** Network usage

### ACTIVITY 5

- a. Title of the activity:** Works on the internet network and access control in the workshop building
- b. Date:** January- June 2024
- c. Place:** Sibiu Energetic Technical College/ online platform
- d. Participants:** The students involved in the project.
- e. Brief description of the activities:**
- CCTV surveillance system repair work in the dormitory building -- identification of faulty components
  - CCTV surveillance system repair work in the dormitory building -- replacement of defective components, parameterization of new components



- Access control system repair work in the dormitory building -- functional check of the system, enrollment of new TAGs
- Access control system repair work in the dormitory building -- installation and use of the software application

**f. People in charge:** Prof. PhD. Volosciuc Sorin Dan, Prof. Stoica Marius

**g. Beneficiaries:** Students from pre-university education, teachers

**h. Assessment method:** Use of the network and access control system in the dormitory

## ACTIVITY 6

**a. Title of the activity:** Installation works of an access/time control system in the electronics-automation laboratory

**b. Date:** January- June 2024

**c. Place:** Sibiu Energetic Technical College/ online platform

**d. Participants:** The students involved in the project.

**e. Brief description of the activities:**

- Installation of an access/time-in control system in the electronics-automation laboratory – installation and commissioning

**f. People in charge:** Prof. PhD. Volosciuc Sorin Dan, Prof. Stoica Marius

**g. Beneficiaries:** Students from pre-university education, teachers

**h. Assessment method:** Use of the network and access control system

## ACTIVITY 7

**a. Title of the activity:** Evaluation of project progress; project functionality; Dissemination of the project

**b. Date:** January- June 2024

**c. Place:** Sibiu Energetic Technical College/ online platform

**d. Participants:** The students involved in the project.

**e. Brief description of the activities:**

- Evaluation of project progress; project functionality; Dissemination of the project

**f. People in charge:** Prof. PhD. Volosciuc Sorin Dan, Prof. Stoica Marius

**g. Beneficiaries:** Students from pre-university education, teachers

**h. Assessment method:** Use of the network and access control system





### D.8. Gantt Diagram of activities

Nr. crt.	Specific objectives	Activity	December 2023	January 2023 – June 2024	6 June 2024	Responsible
1.	Implementation of AGILE/SCRUM techniques in the realization of school projects Using online platforms of type for project management.	<b>A1.</b> Project launch; Project presentation. Organizational activities; The European project EduTrans21 is briefly presented to the students involved.	<b>X</b>			Project coordinators proiect + EduTrans21 Project team
2.	Specific activities for the realization of the works included in the project: "ENERGETIC I-NETWORK - Creating Sustainable Network for Digitization" Raising awareness and informing students about the 17 Sustainable Development Goals included in the UN 2030 Agenda	<b>A2.</b> Internet network in the main school building and installation of cameras in classrooms		<b>X</b>		Project coordinators proiect
		<b>A3.</b> Works on the realization of the voice-data network on optical fiber between the school building and the workshop building		<b>X</b>		Project coordinators proiect
		<b>A4.</b> Setting up the internet network in the workshop building		<b>X</b>		Project coordinators proiect
		<b>A5.</b> Internet network and access control works in the workshop building		<b>X</b>		Project coordinators proiect
		<b>A6.</b> Installation works of an access/time control system in the electronics-automation laboratory		<b>X</b>		Project coordinators proiect
3.	Dissemination of results; Developing students' interest in the Sustainable Development Goals	<b>A7.</b> Evaluation of project progress; project functionality; Dissemination of the project Publication of project results on the EduTrans21 website Publication of the project results on the energeticsibiu.ro website			<b>X</b>	Project coordinators proiect + EduTrans21 Project team



**D.9. Qualitative and quantitative results expected as a result of project implementation**

- Use of the Internet in all classrooms and laboratories;
- Use of the access control system in the dormitory;
- Use of video cameras in classrooms.

**D.10. Ways of monitoring and evaluating the project**

The monitoring is carried out by the competition organizing committee, the director of the institution.

- Weekly meetings with the ENERGETIC I-NETWORK project team;
- Analysis and establishment of the steps to follow in the development of activities;

**D.11. Ways to ensure the continuity/sustainability of the project**

In order to ensure sustainability, we proposed the following: promoting the project and attracting other young people to the project's activities; maintaining partnerships and attracting new partners; At the same time, the project comes with the proposal to carry out some activities by the end of 2023-2024 school year.

**D.12. Promotion/media and dissemination activities that you intend to carry out during the implementation of the project**

- Dissemination of the results of the project at the presentation of the professional certificates at the June 2024 Professional Competences Certification Exam.
- Posting an activity sheet on the Edutrans21 international project website.
- Dissemination of the project in the project meetings with the partners of the Edutrans21 project

**Principal**

Prof. PhD. Volosciuc Sorin Dan

**Coordinators:**

Prof. PhD. Volosciuc Sorin Dan

Prof. Stoica Marius