



# TRAIN-THE-TRAINERS EVENT, MISKOLC

Erasmus +

## "STEM UPGRADE BY CREATIVITY"

### **The aim of the project:**

The application of new approaches and technologies is a key success factor in education of STEM subjects. All the participating institutes at University of Miskolc are actively working on the improvement of teaching methodologies and the main goal of the event is to present our good practices and proposals worked out in the STEMUP project. The primary target group of the project is university teachers, while the secondary target group is secondary school teachers. The train-the-trainers event is a good opportunity to disseminate the new methodologies and technologies and to share our experiences with other colleagues. The developed tools include workshops, multiplier events, and activities for trainers. The presented approaches can be applied both in university and secondary school level educations.

### **Aim of the Learning, Teaching, Training Activities:**

Learning, education and training activities provide an opportunity for knowledge sharing between universities and secondary schools. The topics covered in the STEMUP event relate to three faculties of the university: Faculty of Earth and Environmental Sciences and Engineering, Faculty of Materials and Chemical Engineering and Faculty of Mechanical Engineering and Informatics. The presentations relate to different forms of gamification techniques: organization of extreme precision farming and soil science camps, setting up of digital AR sandbox shows, development of additive manufacturing technologies experiments, organization of multi-disciplinary programming competitions and development of software tools for gamification in teaching of programming skills.

### **Aim of the Training of teachers program:**

The program will primarily involve teachers, as the main goal is to train trainers to ensure the transfer of skills and knowledge to use the products developed during the project. This event is organized at project level, so each of the project partners can delegate participants. This is a short-term joint staff training event.

# Train-the-trainers event, Miskolc

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*Miskolc, 11.-13.5.2023*

*University of Miskolc*

## *Gamification Technologies*

We will organize a three-day training and workshops for the dissemination of knowledge on the topic of gamification technologies. The event is primarily intended for university and secondary school teachers. The event consists of five modules: sandbox shows, development of additive manufacturing technologies experiments, organization of multi-disciplinary programming competition and development of software tools for gamification in teaching of programming skills. The teaching material (slides with extended notes) and demo presentations are intended to transfer theoretical and practical knowledge in teaching methodologies. The training participants will have the opportunity to gain experiences in the application of different gamification methods and technologies.

### **Content of event:**

- Challenges in STEM Education
- Virtual Sandbox Technology as a Gamification Tool
- Gamification Tools in Teaching of Programming
- Gamification in Complex Projects on Software Development
- Extreme precision farming and soil science camp
- Gamification Project in Additive Manufacturing Technologies

### **The scope:**

The event will train teachers of STEM areas (engineering, earth science and informatics) who are interested in the application of gamification tools. The participants will gain both theoretical and practical knowledge on the current gamification methodologies and technologies. The program is open also to students who want to learn about our experiences in gamification oriented education.

### **Location**

University of Miskolc (Faculty of Earth and Environmental Sciences and Engineering, Faculty of Materials and Chemical Engineering and Faculty of Mechanical Engineering and Informatics)

Miskolc-Egyetemváros, H-3515 Hungary

### **Date**

11.-13.5.2023

## Timetable

### Thursday, 11th May 2023

13:30	Opening of the event	Representative of ME
14:00	Challenges in STEM Education	László Kovács
15:30	Break	
16:00	Virtual Sandbox Technology	Lajos Szalontai
17:00	Visit to Miskolc city	

### Friday, 12th May 2023

9:00	Gamification Project in Teaching Programming	László Kovács
10:15	Gamification in Complex Projects on Software Development	Erika Baksáné Varga
11:30	Visiting Laboratories of Mechanical Engineering and Informatics	Erika Baksáné Varga
13:00	Lunch break	
15:00	Extreme precision farming and soil science camp	Anett Mészárosné Póss
16:15	Visiting Laboratories of Earth and Environmental Sciences and Engineering	Lajos Szalontai

### Saturday, 13th May 2023

9:00	Gamification Project in Additive Manufacturing Technologies	Sándor Endre Kovács
10:30	Visiting Laboratories of Materials and Chemical Engineering	Sándor Endre Kovács
11:30	Discussion of outcomes, materials and methods, Closing of the event	László Kovács
12:30	Lunch break	

*We look forward to meeting you!*