



Co-funded by  
the European Union



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.

# Designing methodology and content for STEM curriculum enhancement for students



## 4 - Semester Curriculum (120 ECTS)

This Programme is funded by the European Union Erasmus+ KA220-HED - Cooperation partnerships in higher education Call 2024 Round 1 KA2  
Project Reference: 2024-1-BG01-KA220-HED-000253761



**Co-funded by  
the European Union**



**Duration:** 2 academic years

**Target group:** Graduates/new teachers

## **Semester 1 (30 ECTS)**

### **Mandatory Courses (24 ECTS):**

- Theoretical Foundations of STEM/STEAM Education (Uzbekistan) - 5 ECTS
- Integrated STEM Education and Pedagogical Approaches (Turkey) - 7 ECTS
- Innovative Pedagogies and Technologies in STEM (Bulgaria) - 5 ECTS
- Digital Tools and Media Literacy (Uzbekistan) - 5 ECTS
- Ethics in Scientific Research (Turkey) - 2 ECTS

### **Elective Course (Choose for 6 ECTS):**

- ESP / Academic English (Uzbekistan) - 6 ECTS
- Introduction to Programming for STEM (Serbia) - 6 ECTS

## **Semester 2 (30 ECTS)**

### **Mandatory Courses (21 ECTS):**

- STEM-Based Science Teaching (Turkey) - 7 ECTS
- Chemistry and Physics Integration in Technological Projects (Uzbekistan) - 5 ECTS
- Environmental Physics (Serbia) - 6 ECTS
- Seminar (Turkey) - 3 ECTS

### **Elective Courses (Choose for 9 ECTS):**

- Green Chemistry (Serbia) - 6 ECTS
- Digital Visualization in STEM Education (Turkey) - 6 ECTS
- Techniques for Accessibility and Inclusion (Uzbekistan) - 3 ECTS

This Programme is funded by the European Union Erasmus+ KA220-HED - Cooperation partnerships in higher education Call 2024 Round 1 KA2

**Project Reference: 2024-1-BG01-KA220-HED-000253761**



Co-funded by  
the European Union



### **Semester 3 (30 ECTS)**

#### **Mandatory Courses (24 ECTS):**

- Pedagogical Practice (Uzbekistan) - 5 ECTS
- STEM Project Development and Management (Bulgaria) - 5 ECTS
- Specialization Course (Turkey) - 6 ECTS
- Applied Statistics and Data Analysis (Serbia) - 6 ECTS
- Master's Thesis: Research Plan (Uzbekistan) - 2 ECTS

#### **Elective Course (Choose 1 for 6 ECTS):**

- Computational Thinking Skills in STEM Education (Turkey) - 6 ECTS
- Research in STEM Education and Innovation Lab (Uzbekistan) - 3 ECTS
- Mathematical Modelling in STEM Education (Serbia) - 6 ECTS

### **Semester 4 (30 ECTS)**

#### **Mandatory Courses (24 ECTS):**

- Internship (STEAM Mentoring and Teacher Training) (Uzbekistan) - 8 ECTS
- Thesis Study (Turkey) - 10 ECTS
- Leadership and Change in STEM Education (Bulgaria) - 5 ECTS
- Scientific Writing and Communication (Serbia) - 3 ECTS

#### **Elective (Choose for 6 ECTS):**

- Biomimicry-Based STEM Education (Turkey) - 6 ECTS
- Health and Lifestyle Education through Biology (Serbia) - 6 ECTS
- Digital Content in STEM Education (Uzbekistan) - 3 ECTS