International Workshop on Advanced STEM, Python-Based Computational Thinking and Programming Education (STEM-CODE 2026)

Workshop Overview

The STEM-CODE 2026 Workshop focuses on innovative approaches in Science, Technology, Engineering, and Mathematics (STEM) education, with an emphasis on Python-based computational thinking, algorithmic problem solving, and programming pedagogy. The workshop unites educators, software developers, researchers, and industry partners to explore computational literacy, hands-on coding practices, and the integration of advanced digital skills into modern education systems.

Workshop Tracks

Track 1 – Computational Thinking and Problem Solving
• Foundations of computational thinking
• Algorithm design and logical reasoning
• Classroom strategies for computational skills

Track 2 – Python Programming for Education
• Python for beginners and non-programmers
• Python in STEM subjects: physics, biology, mathematics
• Data visualization, simulations, and automation tools

Track 3 – Advanced Python Applications
• Machine learning and AI basics for education
• Parallel programming and performance optimization
• Scientific computing with NumPy, SciPy, and Matplotlib

Track 4 – STEM Pedagogy and Curriculum Innovation
• Design-based learning and inquiry-driven projects
• Robotics, sensors, and microcontrollers in STEM
• Integrating real-world problem solving into STEM curricula

Track 5 – Teacher Training, Capacity Building, and Digital Skills
• Professional development for STEM educators
• Programming bootcamps and hands-on workshops

- Preparing students for future STEM careers

Additional Information

This workshop encourages participants to explore advanced approaches to STEM learning, create open-source teaching tools, and form international collaborations in computational education. Proposals for coding hackathons, hands-on Python labs, robotics demonstrations, and cross-border STEM education initiatives are highly encouraged. Optional collaboration agreements (MoI) may be signed during the congress.

For further information regarding this workshop or contribution opportunities, please contact: SCITEED 2026 Secretariat Email: reg@sciteed.org Website: www.sciteed.org