

Specific Objectives:

- Develop comprehensive gap analysis of the STEM education requirements in Egypt focusing on teacher qualification requirements for STEM track.
- Design and develop STEM teacher one-year diploma offered at EG participating universities.
- Design and develop (pedagogical-psychological, knowledge-specific) courses for STEM teacher diploma with dual education design concept and according to ECTS system.
- Develop the diploma according to ECTS system to be upgraded later to a Master's degree.
- Accredite the developed diploma both in EG and in EU through recognized STEM education development institutes.
- Develop STEM teacher resources for STEM schools or schools applying STEM concept.
- Establish STEM resource center for sustainable development of STEM school resources.
- Establish exchange links between EG and EU and train EG trainers in EU partner institutions.
- Implement the STEM teacher diploma.

Project Summary:

This project aims at creating dual (university-school) integrated diploma for developing a new generation of STEM teachers in Egypt, who are capable to provide adequate and innovative teaching in Science, Technology, Math and Engineering-based subjects, embracing STEM philosophy and are capable to bridge the gap between current school education methodologies and those needed for future pre-university school evolution. Adequate school education is the foundation for any human capacity development in Egypt, which has suffered continual degradation during last 3 decades in both quality and quantity of students pursuing STEM-based careers. This has directly contributed to ranking Egypt in the tail of the list of innovative-driven countries affecting both social and economic prosperity and effective integration in the global system. This shall be realized by an EG and EU accredited multi-track diploma lasting for 9 months, 6 of which introduced at participating universities covering pedagogical, psychological, technology-based education and engineering modules followed by 3 selective knowledge-specific tracks. The remaining 3 months are covered via apprenticeship integration in operating schools. The diploma program is equipped with a STEM resource center capable of feeding STEM schoolteachers with ever-developing ICT- and hardware resources converting abstract math/science education into engineering and technology-based innovative applications.

The targets of this program are the employed and future math/science primary/secondary schoolteachers. The proposed diploma shall be developed in cooperation between universities, public authorities and NGOs. The plan is to start running this diploma during the third year of the project to account for fine adjustments. A gap analysis will be developed and followed by comprehensive course development. A wide community impact is expected as outlined by various stakeholders from the higher and pre-university education communities.

### Project Consortium

1. Applicant Organization: Ain Shams University, Egypt

### List of Partners (National Project)

2. The Glasgow Caledonian University, United Kingdom
3. Latvijas Universitate, Latvia
4. Kungliga Tekniska Hoegskolan, Sweden
5. Nile University, Egypt
6. Alexandria University, Egypt
7. Egyptian E-Learning University, Egypt
8. Ministry of Education, Egypt
9. Misr Elkheir Foundation, Egypt
10. Ministry Of Communications & Information Technology, Egypt

Total Grant Requested: EUR 906,318.00

Special Mobility Strand Additional Grant: No

Duration: 36 months