



Co-funded by the
Erasmus+ Programme
of the European Union

Erasmus+KA2 ESTEM

Project Title:

[eSTEM] International Diploma for School Teachers in STEM Education

Project Partners:

Egyptian Partners:

1. Ain Shams University [ASU]
2. Nile University [NU]
3. Egyptian E-Learning University [EELU]
4. Alexandria University [AU]
5. Ministry of Education
6. Misr El-Kheir Foundation
7. Ministry of Communication and Information Technology – MCIT

European Partners:

1. Glasgow Caledonian University – GCU
2. University of Latvia – LU
3. Royal Institute of Technology – KTH





Scope of Work:

Aims and Objectives:

The project aims at developing a new generation of qualified STEM teachers who are capable to provide adequate and innovative teaching in Science, Technology, Math and Engineering-based subjects and who are able to stimulate Problem-solving, Innovation, Invention, Self-reliance, Logical thinking and Technological literacy in students qualified for and are willing to pursue STEM-based higher education and jobs. The developed teachers shall be able to work in STEM schools in Egypt and Arab countries as well as working with STEM methodology and resources in regular public and private schools. This is realized through the following objectives and milestones:

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

The objectives resemble 4 milestones that will serve the wider objective and that (if properly implemented) will improve the situation:

1. Gap analysis for STEM education and teacher requirements in Egypt.

2. Develop the diploma content (courses, resources, technical and administrative structure and accreditation).
3. Train EG trainers (diploma instructors).
4. Implement the diploma.

If properly implemented, qualified math and science teachers in EG regular schools shall find a means and support to improve their capabilities, methodologies and shall have the required resources to either work in STEM schools or apply the STEM teaching technologies in regular schools. This way three pillars of pre-school education in STEM tracks shall be erected (teacher, teaching methodology, teaching resources). This shall integrate with the ambitious plans of MOE/MCIT and shall provide the needed resources to expand and/or apply STEM concept and schools. This shall allow for sustainable supply of qualified STEM teachers to work and improve in the STEM schools or regular schools with STEM concept, allowing for further interest in STEM-based tracks, which eventually shall affect the number and quality of graduates working in STEM-based jobs, which ultimately contributes in the economic and technological growth in EG and improve innovation and finally competitiveness.