



## **Erasmus+KA2 VET-ENG**

### **Project Title:**

[VET-ENG] Blended Vocational-Engineering-Industry Shared Learning Environment for Stream of Socially- and Technically-Competent Technicians and Engineers

### **Project Partners:**

#### ***European Partners:***

- University of Turku (UTU)
- Karlsruhe School of Applied Science (HSKA)
- Politechnical Institute of Torino (POLITO)
- Machine Technology Center (KTK)

#### ***Egyptian Partners:***

- Ain Shams University (ASU)
- Aswan University (ASWU)
- Nile University (NU)
- Arab Academy for Science and Technology (AAST)
- Industrial Training Council (ITC)
- Ghabbour Auto (GB)



Turun yliopisto  
University of Turku



Hochschule Karlsruhe  
Technik und Wirtschaft  
UNIVERSITY OF APPLIED SCIENCES



**POLITECNICO  
DI TORINO**



## **Scope of Work:**

### **Objectives:**

The project aims at developing a new line of industry human capital (engineers and technicians), who are free of social segregation mindset, possess industry-tailored competences, capable to fit directly in the actual work environment after graduation, embrace true work ethics and respect their fellow colleagues and who have been engaged in up-to-date technologies throughout their school life within the factory. This is achieved through establishment of (engineering school-vocational school-factory) shared learning environment, where industry-inspired project-based learning is implemented in engineering and vocational curricula engaging vocational and engineering students in fully integrated teamwork realizing different aspects of a mutual project and/or product that is prescribed by industry.

This shall be realized through:

- Comprehensive gap analysis of social and technical deficiencies of engineering and vocational graduates, shared learning vocational-engineering environments, project-based learning approach and engineering/vocational courses to target for the interdisciplinary VET-Eng projects.
- A set of interdisciplinary VET-Eng projects and products that engage both engineering and vocational competencies in development and that are cross-linked with different engineering AND vocational courses during the last two years of Eng./Voc. education in Mechanical, Electrical, Manufacturing and Mechatronics fields.
- Establishment of sustainable industry link with VET-Eng teams to compliment the shared learning environment with the third component (industry).
- Practical and shop-floor training programs for the VET-Eng teams on factory operation and actual industrial equipment used. Part of that shall be tailored to projects to develop.
- Work ethics and soft skills training modules that are implemented within process flow of project implementation.

- Enforcement of social and academic interactivity among engineering and vocational teams throughout the interdisciplinary projects implementation.
- Development of practical content of the engineering courses and vocational courses during the last two years to be an ingredient and component of the interdisciplinary projects.
- Training of EG school teachers, faculty and industry supervisors how to technically/socially supervise and manage a group of vocational and engineering students and make them ready for industry integration.
- Capacity building of participating EG academic institutions with appropriate production tools and equipment to facilitate project/products development.
- Implementation of the project-based learning process, both at schools/university within courses in a physically and virtually shared learning environment to develop the multi-faceted projects.

The objectives were designed to interpret the wider aim and serve directly each part of technical and character-building process for BOTH vocational and engineering.

### **Aim and Scope:**

- A new innovative learning methodology for vocational AND engineering students is introduced, which integrates teams from both disciplines to work together in project-based learning environment which engages teams in cooperative project work that requires both groups diverse competencies, this is expected to improve the academic and skill competencies of both teams and ensures social blending of the once segregated groups throughout the industry-inspired projects being mutually developed.
- The projects shall map the ILOs of the vocational and engineering academic courses, while adding a new layer of inter-personal skills.
- The new project-based approach shall target, mechanical, electrical, manufacturing and mechatronics tracks for both vocational and engineering disciplines.