

**Project Call:** ERASMUS+, Cooperation partnerships in the field of higher education

**Project title:** Collaborative e-platform for innovation and educational enhancement in medical engineering - CALLME

**Num of institution:** 6 (5 HEI and 1 company/cluster from IT): UNIVERSITATEA TEHNICA CLUJ-NAPOCA, RIGAS TEHNISKA UNIVERSITATE, DUBLIN CITY UNIVERSITY, UNIVERZITET U KRAGUJEVCU, G.M EUROCY INNOVATIONS LTD

**Application:** Romanian NA

**Project topics:** IT, Medical, Engineering, Education, Machine Learning

**Knowledge triangle:** Innovation, Business, Education

**Knowledge network:** Specific type of connection between knowledge triangle entities

**Main Target groups:** HEI: Students, Teachers, Researchers; Medical engineering: design and production engineers, research engineers. Medical Clinics: Complete medical staff.

**Target group diversity:** People with specific disabilities will also be able to use project outputs.

**Short Project summary:**

The aim of the project is to implement a novel educational methodology (NEM), and STEM (Science, Technology, Engineering and Math) based on molecular (atomic) learning into the existing educational (learning) processes in medical engineering. Several curriculums and courses will be affected by this methodology (which will be shown as project outputs). Beside NEM, another important output will be open e-platform (E-COOL) for collaboration and knowledge exchange, which will enable application of NEM, molecular network structure of knowledge triangle elements (business, innovation, HEI), enhancement of existing HEI curriculums and creation of new applicable.

**Work packages**

WP1 Project management

WP2 Building Knowledge triangle network based on molecular design

WP3 Development of curriculums and courses for medical engineering based on Novel Educational Methodology and STEM

WP4 Development of open E-platform for collaboration and knowledge exchange

WP5 Dissemination and Sustainability

**Main Goal**

To form a knowledge triangle network that will enable interconnection between education, innovation, and business to enable knowledge transfer and sustainability of the developed platform, and to provide capabilities for constant upgrade of learning techniques by using Novel Educational Methodology (NEM) and Science, technology, engineering, and mathematics (STEM).

### **Goals directly connected to WP**

- WP1 objective: Project management
- WP2 objective: Formation of the network for medical engineering and education which will enable knowledge exchange, cooperation, and collaboration primarily between HEIs, business and public institutions
- WP3 objective: Application of Novel Educational Methodology (NEM) and Science, technology, engineering, and mathematics (STEM) principles into existing learning material and formation of the basic principles for the creation of future curriculums and courses for HEIs and business
- WP4 Objective: Formation of web platform (E-COOL Smart Content Management System) to enable integration of formed network and application of principles for courses creation based on NEM and STEM
- WP5 Objective: Promote network and NEM and enable sustainability by using developed E-COOL platform and other applicable resources.

### **Sub-Goals connected to WP and activities**

- Integration of NEM into existing HEIs and business curriculums, and formation of the basis for the creation of future courses based on NEM (WP3)
- To apply STEM philosophy in NEM and to develop courses and curriculums based on STEM principles. (WP3)
- Development, testing, and adaptation of existing and novel learning and teaching methodologies and pedagogical approaches (WP3)
- Delivering and enhancing key competencies and skills through education and collaboration, while focusing on the use of modern ICT (E-COOL platform) and related technologies in the field of medical engineering. (WP2-WP5)
- Development, testing, and application of flexible learning pathways and modular online course design and appropriate forms of assessment, including the development of online assessment. (WP1, WP3, WP4)
- Enabling lifelong learning in higher education, including facilitating the initiation, validation, and recognition of short blocks of training leading to micro-credentials. (WP2, WP3, WP4)

- Development of online pedagogical approaches, including transdisciplinary approaches, new curriculum design, delivery methods, and assessments (WP3, WP4)
- Fostering an entrepreneurial, open, and innovative higher education sector, by promoting learning and teaching partnerships with commercial and non-commercial organizations in the public and private sector. (WP2)
- Development of new practices in teaching design, based on educational research, innovation, and creativity (WP3)