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**Creativity, Innovation and Entrepreneurship for  
Engineering Education Excellence**

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## **EBCC Model: Engineering Skills for Innovative Product Design Based on Regional Needs**

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**Conference Key Areas:** Engineering Skills; Innovation as the Context for Engineering Education; Sustainable Development Goals in Engineering Education.

**Keywords:** engineering skills, general skills, skill levels, engineering curriculum.

### **Abstract**

The workshop is organized in the framework of the Erasmus+ strategic partnership project No 2017-1-LV01-KA203-035426 “Education, Business and Community Cooperation Model for a Creative European Engineering Education” (EBCC Model). There are five partners in this project: Riga Technical University, Latvia (RTU), Institut Supérieur de Mécanique de Paris, France (SUPMECA), Aristotle University of Thessaloniki, Greece (AUTH), Établissement public territorial Plaine Commune, France (PLAINE

COMMUNE), and the European Society for Engineering Education, Belgium (SEFI). The workshop is facilitated by 7 experienced faculty and administrative staff members from these organizations. They have experience in development and implementation of the curriculum for project-based engineering education.

The objective of the workshop is to share knowledge and best praxis for improvement of the study curriculum and syllabus integrating the skills that are essential for engineering education taking into account the convergence of project/problem-based learning, mechanical engineering, product design using rapid prototyping and computer-aided design methods.

The workshop has length 120 minutes and includes keynote presentations, discussions and practical case in working groups of 5-7 persons. Participants will receive a workshop booklet containing all presentations and reference materials.

### **Agenda**

10 min.: Introduction. Moderated by RTU.

10 min.: The presentation of the survey results on the relevance of the 14 selected skills for engineering education that are based on the convergence of project/problem-based learning, engineering, product design using rapid prototyping and computer-aided design methods. Moderated by RTU.

20 min.: The participants will take part in the survey and express your opinion about essential skills that a contemporary engineer should possess. Moderated by RTU.

5 min.: Creation of working groups of 5-7 persons.

20 min.: The groups will discuss, nominate and present skills that are essential, but are not included in the list of the 14 selected skills. Each group will offer 1-2 additional skills for further evaluation according to the methodology used in EBCC Model. Moderated by RTU.

10 min.: The presentation of guidelines for integration of the selected skills into the curriculum and syllabus. Moderated by SUPMECA.

30 min.: The case study where the working groups assess what skills can be developed in study courses of the provided case curriculum and to what level. Moderated by SUPMECA and assisted by RTU, AUTH and PLAINE COMMUNE.

15 min.: Feedback by each group and the final remarks. Moderated by RTU.

The participants will learn to what extent students should acquire the selected skills keeping in mind the research, technology and labor market development tendencies and needs of local community. There will be discussion about the methodology and results of the survey and the list of the selected skills. The

participants will take part in practical exercise where they will create an updated version of the case curriculum using in the EBCC Model developed guidelines for integration of the selected skills into the curriculum and syllabus.