

**Proceedings
of the 46th SEFI Annual Conference 2018**

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

Co-organized by SEFI and Technical University of Denmark

@SEFI Brussels, Belgium

SEFI - Société Européenne pour la Formation des Ingénieurs

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ISBN: 978-2-87352-016-8

EBCC Model: Idea Creation for Project/Problem-Based Learning in Engineering Education

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

Keywords: sustainable partnership, real life cases, engineering education, community, local government.

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 in cooperation of local governments and communities with higher education institutions to use real life cases in engineering education.

The selection of the topics for project/problem-based learning (PPBL) is essential for academic success. It should ensure multidisciplinary approach and emphasize the involvement of different levels (for example Master and Bachelor) in order that students from different levels / with different backgrounds could work and learn together.

The workshop has length 120 minutes and includes keynote presentations, discussions and the role-play exercise 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 SUPMECA.

10 min.: The presentation and discussions on cooperation praxis and tendencies of local government and community with higher education institutions. Moderated by PLAINE COMMUNE.

10 min.: The presentation and discussions on the proposed case and/or innovative project idea creation model. Moderated by RTU.

15 min.: Presentation about rapid prototyping and kind of projects in which it is more adapted / efficient. Moderated by AUTH.

10 min.: The presentation and discussions on recommendations for student team building in PPBL to achieve academic targets at the same time contributing in the solution of real life problems. Moderated by SUPMECA.

15 min.: Case description for the role-play exercise: information (including pictures, short videos) on community demographic, economic and social situation, main development targets of the local government and other additional information. Creation of working groups of 5-7 persons. Moderated by PLAINE COMMUNE.

30 min.: The role-play exercise to find innovative ideas for PPBL analyzing economic processes and issues in community. The participants will play roles of teachers and students, but RTU, SUPMECA, AUTH and PLAINE COMMUNE representatives will play roles of local government and community members. Moderated by SUPMECA.

15 min.: Presentation of the exercise results by working groups. Feedback and the final remarks. Moderated by SUPMECA.

15 min.: Final remarks. Moderated by RTU

The participants will learn how to redefine problems outside boundaries of one study course, as well as will share knowledge and best praxis for facilitating use of 3D printing technologies to allow students to acquire practical skills in product design engineering. They will try to combine academic targets with the development of innovative products, the industry needs and the contribution to the regional development.