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Continuing Engineering Education New Paradigms?

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Submission: Hands-on workshop

I. Background

For decades, lifelong learning has been a well-known concept, which has grown in importance as we gradually move away from the belief of ‘learn-earn-retire’ to an understanding of up-skilling and re-skilling throughout a life span. This change in beliefs must of course also be seen in the light of rapid technological progress which increasingly calls for new skills and competences. To some extent, providers of continuing education courses and programs meet these needs, but there is growing demand for more flexible and tailored learning activities and micro-credentials. Professional engineers will experience the demand and need to continually assess and close skill gaps as they arise. How are we, - and how will we, as universities respond to it?

II. Explanation

Continuing Engineering Education (CEE) is often referred to as the universities’ third mission or outreach activity (Fink, 2002). However, CEE activities are often part of university strategies aiming at e.g., interacting with society; cross-collaboration with companies; research collaboration; knowledge exchange etc. Many universities offer CEE programmes, but the programmes offered differ greatly, and in general, collaboration with public and private companies is a relatively new and limited ‘business’ for most universities. In recent years, however, new methods and paradigms for continuing education have been developing (Andersen et al., 2021) some initiated by European and national programmes and grants, with the aim of upgrading the workforce e.g., to meet the skills and competence requirements derived from the SDGs and Industry 4.0 (Chakrabarti et al., 2021).

This workshop is based on research conducted in a Strategic Partnership funded by the Erasmus+ programme. The project ‘STEM skills and competences for the new generation of Nordic engineers (nordenhub.org) The project conducted a mapping of activities within CEE at Scandinavian universities - based on data from 10 different technical universities in the five Scandinavian countries. The study aimed at mapping the strategies and current practices and identifying trends in cross-collaboration and new paradigms for knowledge flow between universities, industries and professional engineers.

With inspiration from the Nordic engineers (2018-2022), this workshop will facilitate the participants in conceptualizing and sharing knowledge of CEE.

III. During the workshop

This workshop aims to gather academic staff to brainstorm on several paths for the future practice, organization, and strategies of CEE.

The 90-minute workshop will be divided into six sections:

Presentation of the current state of CEE in a Scandinavian context.

Session 1: Brainstorming discussions in groups and the conceptualization of CEE

Scouting and presentation on concept mapping

Session 2: Knowledge sharing session in groups on CEE practice and strategies Presentations

Wrap up: Discussion and conclusion

IV. After the workshop

At the end of the workshop, participants are expected to experience the following outcomes:

- An elaborated understanding of the CEE concept
- Knowledge on how CEE is practiced and organized at various universities
- Knowledge of different CEE strategies

Based on the workshop outcomes and group presentations, we will explore the possibility to write and submit a proposal (paper, project etc.) together with the participating attendees the workshop.

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