

ICL Special Session Call for Papers

Title

Engineering Education for “Smart work” and “Smart life”

Acronym

IPW-Session

Overview

The advancing digitization of all areas of life optimizes work processes, changes them and creates new professional profiles. Associated with this are new *requirement and competence profiles* for employees. They increasingly include *digital competences*, which not only pose challenges for older people and low-qualified people (OECD, 2015), but also for all actors in the world of work, in all functions and at all competence levels (OECD, 2016; EU Commission, 2020), so do engineers of all subjects and disciplines.

Companies, politics, administration and educational institutions are called upon to work together in a transdisciplinary manner and to define, validate and promote digital competences. In addition to the purely technical use of *digital tools*, many *digital competences* are actually *communicative competences*, including linguistic, i.e. symbolic, iconic, graphic and visual language *multimodal competences*.

A demand-oriented and employment-oriented engineering education must take this into account, whereby it has to be geared strongly to the job requirements in business and society that are determined by the specifics of engineering activities. In the context of digitization, in addition to the actual technical education and its scientific fundamentals, communicative skills, ethical questions, critical ability in dealing with digital tools, information and data, thinking structures typical for engineers for the development, optimization and diagnosis of more complex smart technical systems, interdisciplinary cross over thinking and much more will get into the focus of engineering education. The promotion of such complex personality dispositions requires a humanistic engineering education, requires “*Persönlichkeitsbildung*”.

The session “Engineering Education for ‘Smart Work’ and ‘Smart Life’”, organized by the Scientific Society for Engineering Education (IPW), addresses essential questions about the requirement-based engineering education against the background of digitization processes. This includes the content of engineering education, its methodological design and questions about the engineering-pedagogical qualification of the teaching staff, whose tasks will increasingly include the development of digital competences in the future.

ICL2021

„Mobility for Smart Cities and Regional Development – Challenges for Higher Education“

TU Dresden und HTW Dresden, Germany, 22-24 September 2021

Topics

- Digital Competence Framework in engineering education
- Communication and collaboration in digital spaces
- Experimental "understanding" of reality - real laboratory or SmartLab
- Typical engineering ways of thinking and ethical issues in networked work environments
- Engineering-pedagogical requirements for engineering teaching staff and approaches to engineering-pedagogical further training.

Program Committee

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