

ICL2025 Special Session

Call for Papers

Interactive and Collaborative Learning with focus on Artificial Intelligence and Innovative Technologies in Engineering Education (IPWSession)

Overview

New developments such as artificial intelligence or innovative technologies, e. g. robotics or cyber-physical systems, depicts not only a new way of thinking but also requires new approaches in engineering education and technical vocational training. The design of complex learning processes demands not only developing technical skills but also using scientific methods and complex knowledge in a reflective manner. Reflecting own responsibility for shaping technical systems and estimating their future impacts in application scenarios makes it inevitable to integrate those aspects in competence development in a holistic approach. In the context of future developments of actual technical education and its scientific fundamentals, communicative skills, ethical questions, critical ability, interdisciplinary networking and much more will get into the focus of engineering education.

The session “Interactive and Collaborative Learning with focus on Artificial Intelligence and Innovative Technologies in Engineering Education”, organized by the Scientific Society for Engineering Education (IPW), addresses essential questions about the requirements in engineering education against the background of AI and innovative, future-oriented technologies. This includes the content of engineering training, its methodological design and questions about the engineering-pedagogical qualification of the teaching staff, whose tasks will increasingly include the development of multiple competences in the future.

Topics

- *Holistic Competence Framework in Engineering Education*
- *Interaction, Communication and Collaboration in Digital Spaces*
- *Responsible Use of Artificial Intelligence in Engineering Education*
- *Applications of Innovative Technologies in Interactive Learning Processes*
- *Typical Engineering Ways of Thinking*
- *Ethical Issues in Networked Work Environments*
- *Engineering-Pedagogical Requirements for Engineers and Trainer and Approaches to Engineering-Pedagogical further Training.*

Program Committee

Chair(s)

Ralph Dreher, University of Siegen, Germany, dreher.tvd@uni-siegen.de

Andrea Dederichs-Koch, FOM University of Applied Sciences, Germany, andrea.dederichs-koch@fom.de

Members

Natali Becker, University of Siegen, Germany, becker.tvd@uni-siegen.de

Justinus Pieper University of Siegen, Germany, pieper.tvd@uni-siegen.de

Tiana Hoogstraaten, University of Siegen, Germany, Weiss.tvd@uni-siegen.de

Achim Höfele,

Thomas Jambor, Universität Hannover, Germany, jambor@dei.uni-hannover.de

Daniel Winkler, Hochschule Zittau/Görlitz, Germany, daniel.winkler@hszg.de

Kathy Meyer-Ross, Hochschule für Technik und Wirtschaft Dresden, kerstin-kathy.meyer-ross@htw-dresden.de