

Educating Responsible Engineers

CALL FOR PAPERS

Building a socially and environmentally sustainable society is intrinsically linked to the work of engineers and scientists. As UNESCO has noted, each and every one of the Sustainable Development Goals (SDGs) requires solutions which are rooted in science, technology and engineering. But there is a concern too that engineering is not only part of the solution but also part of the problem: for many engineers, their work is contributing to carbon emissions, unsustainable resource use, biodiversity and habitat loss, and to pollution. There are equally concerns about engineers’ responsibilities in warfare and violence across the globe, and in new, technologically-enabled vectors for discrimination, impoverishment and inequalities. A focus on responsibility has also seen a parallel growth in questions about how thinking and feeling interact in engineering: about excitement, anxiety, burnout, compassion, guilt, shame and hope.

Addressing these questions in engineering education is not straightforward: innovative engineering solutions to social and environmental challenges will require the highest levels of technical competence and scientific knowledge. But the centrality of technical knowledge to engineering education can create in students the impression that responsibility is a marginal concern for them. Building a sustainable society means educating scientists and engineers that can apply the best scientific knowledge with ingenuity, with ethical competence and with respect for colleagues, for those in wider society and for the natural environment, and therefore need to social and human sciences as part of their education.

How can we ensure the highest quality of technical competence while at the same time ensuring that social and environmental responsibility is core to the identity of engineering graduates? This will be the focus of the European Society for Engineering Education (SEFI) 2024 conference, which will take place at EPFL, Lausanne, Switzerland on 2 – 5 September, 2024.

We welcome three **submission types** (described in more detail below):

- research papers, on engineering education (both quantitative and qualitative)
- practice papers, on teaching innovations in engineering education
- workshops, which will demonstrate or explore an educational practice

Conference Tracks

While contributions on any aspect of engineering education are welcome, we particularly welcome contributions aligned with one of the following *conference tracks*.

1. Teaching the knowledge, skills and attitudes of sustainable engineering
2. Educating the whole engineer: teaching through and for knowing, thinking, feeling and doing
3. Teaching technical knowledge in and across engineering disciplines
4. Teaching foundational disciplines of Mathematics and Physics in engineering education
5. Teaching social and human sciences to engineering and science students
6. Digital tools and AI in engineering education
7. Open and online education for engineers
8. Diversity, equity and inclusion in our universities and in our teaching
9. Continuing education and life-long learning in engineering
10. The attractiveness of engineering education
11. Engineering skills, professional skills, and transversal skills
12. Engineering ethics education
13. Curriculum development and emerging curriculum models in engineering
14. Outreach and openness: industry and civil-society in engineering education
15. Building the capacity and strengthening the educational competences of engineering educators
16. Improving higher engineering education through researching engineering education

Submission types

Participants are invited to make one of three types of submission:

Research paper, presenting original quantitative or qualitative research following the standard practices for engineering education research. In a research paper the authors will present the theoretical background and literature review, as well as methods, analysis and interpretations of their work and will outline the contribution of their research to engineering education research and practice. The length of the research paper is 6-8 pages (excluding references).

Practice paper, presenting ongoing projects and completed studies of practice in engineering education. In a practice paper the authors may present their work on how they practise engineering education, or how they have applied concepts within engineering education, or their review of literature and its application within engineering education. The length of the practice paper is 6-8 pages (excluding references).

Workshop: an engaging and interactive session with a sound theoretical foundation and an attractive translation to the practice of engineering education. A workshop proposal should be of interest to the members of the SEFI community. A workshop proposal will be 4-6

Further information: SEFI2024@EPFL.ch

pages and will include a clear learning goal, a description of the theoretical foundations of the work, and a plan for facilitating the workshop in a way that ensures that the majority of the workshop will be spent with participants engaged in active learning experiences.

8 pages for research papers and practice papers and 6 pages for workshop proposals are the acceptable upper limits. Submissions of shorter length would allow the authors to adapt and develop in response to reviewers’ comments before the final camera-ready copy submission.

Important dates

Please note: the SEFI conference timetable has changed!

For the 2024 SEFI Conference we will **no longer have a two-phase submission process** (abstracts followed later by full papers) **but only one review phase**. Abstracts will not be accepted.

To ensure an efficient review process, we do not foresee extending the deadline!

Call for Papers launched	Mid December 2023
Submission deadline for <ul style="list-style-type: none"> - Research full papers - Practice full papers - Workshop initial proposals 	08.04.2024
Reviewer feedback and notification of acceptance	27.05.2024
Early bird registration deadline	17.06.2024
Final research and practice paper submission (camera ready)	01.07.2024
Conference date	02.09.2024 – 05.09.2024
Final workshop report (camera ready)	30.09.2024