ENGINEERS 4 EUROPE

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E4E: Engineering the Future Engineer
11Apr25, Prague, Czech Republic

Debate panel 1: New trends in Engineering Education

Debate panel 2: Free online training in Engineering

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Moderators:

- Profs. Nikolaos Theodossiou, AECEF President
- Cédric D´Mello, City University, UK
- Alfredo Soeiro, AECEF Secretary General

Speakers:

- Eng. Richard Hlaváč, Projekty-hlavac
- Ms. Lara Jovanovic, University Belgrade, IACES Vice President
- doc. Ing. Daniel Hanus, CSc, Czech Technical University in Prague

Rapporteur:

Prof. Michaela Gkantou, Liverpool John Moores University

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Debate panel 1: New trends in Engineering Education

Sustainability and sustainable development have significantly influenced the mindset of civil engineers, with younger generations focusing more on long-term mitigation, while older professionals tend to prioritise immediate adaptation.

The rising global population and increased consumption present challenges for implementing **renewable energy**; the hardest part is fostering a mindset shift toward sustainable practices.

There is a need for **simplification of engineering laws and standards** to make sustainability and innovation more accessible within the profession.

The idea of a **"skills council"** was proposed to bridge the gap between academic learning and industry needs, offering guidance from experienced professionals. While technical knowledge is covered during early career stages, there is a need for better integration of practical, social, and interdisciplinary skills

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Debate panel 1: New trends in Engineering Education

The integration of **artificial intelligence** into engineering education is considered essential. Students must not only learn AI but also develop the critical thinking necessary to use it responsibly.

Continuous professional development (CPD) is crucial, particularly for academics, to keep pace with fast-evolving technologies like AI. Practical experience should complement theoretical teaching.

Digitally native students often face a disconnect between available tools and traditional teaching. This generation benefits from visual and practical learning, requiring a rethink of university methods.

There is a growing consensus that **engineering education must evolve to include broader skills**—ethical thinking, teamwork, social awareness, and adaptability—to address global challenges and prepare future engineers.

Debate panel 2: Free online training in Engineering

Moderators:

- Mr. Thibaut Skrzypek, École des Ponts and Secretary General EUCEET
- Prof. Ivica Zazrski, University Zagreb and
- Prof. Roode Liias, Tallinn Technological University (Emeritus)

Speakers:

- Ms. Katrijn Vandenborne, Ghent University (BEST)
- Prof. Antonín Lupíšek, Czech Technical University
- Prof. Sarunas Skuodis, Vilnius Tech and EUCEET President

Rapporteur:

- Prof. Michaela Gkantou, Liverpool John Moores University

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Debate panel 2: Free online training in Engineering

There is concern over the effectiveness of online courses in teaching green, life, digital, and entrepreneurship skills, due to a lack of interaction and dialogue; while **the initiative is positive, much development is still needed**.

Online learning platforms should integrate **feedback mechanisms and student organisations** to better support the development of soft skills and foster engagement

While online and hybrid learning offer flexibility, they often fall short in quality compared to in-person teaching; **a balance must be found to ensure learning outcomes meet industry standards**

Strict quality assurance is essential in flexible systems; adaptability to industry needs should not compromise the depth and rigour of learning.

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Debate panel 2: Free online training in Engineering

Engagement strategies such as storytelling, purposeful phone use, and interactive tools can enhance the online learning experience and student motivation.

Online courses should be structured based on learner level—undergraduate, postgraduate, professional—with clearly defined themes and outcomes to avoid superficial content.

Quality assurance and recognition of online learning, especially through micro-credentials, must align with both academic and industry standards to build trust and relevance.

Collaboration with professional bodies and the inclusion of continuous feedback loops are crucial to ensure online qualifications are credible, aligned with market demands, and recognised across sectors