EESF

Engineering Education for a Sustainable Future

Newsletter Issue #3

What's been happening?

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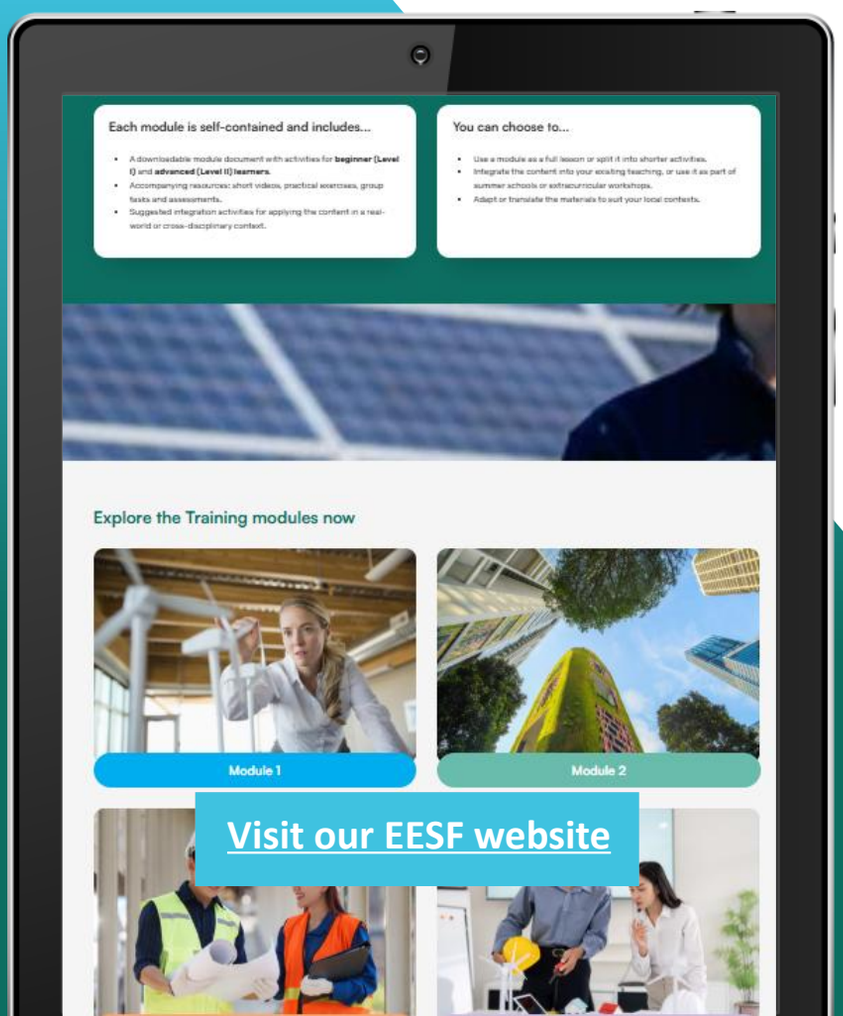
Spotlight WP3 Student Engineers for a Sustainable Future OER Suite is Now Live!

We are thrilled to announce a major milestone for the Engineering Education for a Sustainable Future (EESF) project: our Work Package 3 (WP3) Open Educational Resources (OERs) are officially launched and ready for use.

Following the foundational research completed in WP2, our consortium has been working hard to transform those insights into practical, ready-to-use teaching materials. The result is a dynamic suite of resources designed to help educators seamlessly embed sustainability competences into their engineering programmes.

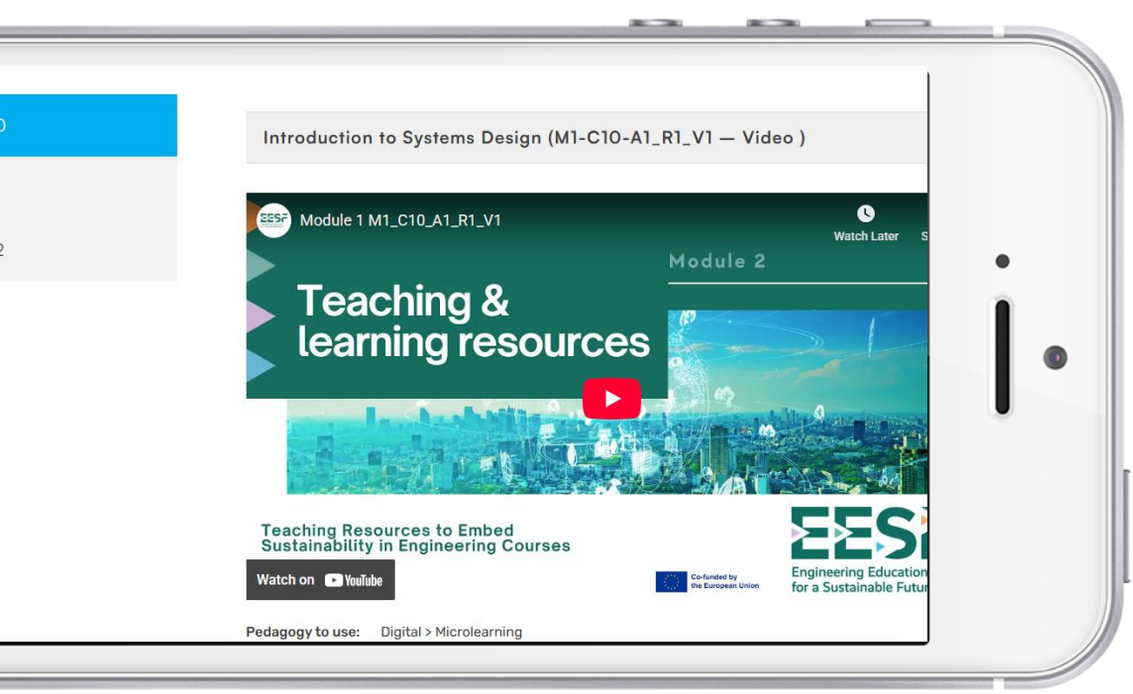
Available in 4 Languages: English, Spanish, French and Portuguese



What is Included in the WP3 Suite?

The core of WP3 is our four highly interactive, student-centred modules. Each module is led by a different Higher Education Institution (HEI) partner and is designed to tackle a unique facet of sustainable engineering:

1. **Module 1: Holistic Engineering for Impact** (Led by Institut Mines-Télécom Business School): Focuses on systems thinking, ethical responsibility, and applying multidisciplinary perspectives to engineering design.
2. **Module 2: Transversal Skills for Sustainable Engineering Leadership** (Led by Atlantic Technological University): Equips students with the non-technical skills necessary for success, including sustainable project management and strategic foresight.
3. **Module 3: Life Cycle Assessment** (Led by Instituto Politécnico do Porto): Provides a deep dive into the LCA methodology, teaching students how to evaluate the environmental impacts of products from "cradle to grave."
4. **Module 4:** Innovating for Global Challenges (Led by Universidad Politécnica de Madrid): Applies sustainability principles to real-world challenges, such as urban infrastructure, transport, and energy generation.



Pedagogical Guide

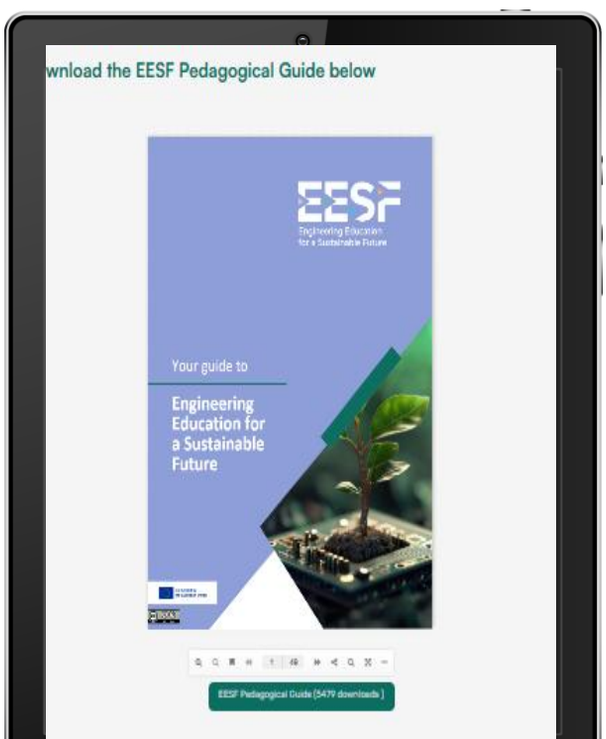
The "Engineering Education for a Sustainable Future" (EESF) guide provides a comprehensive roadmap for embedding a sustainable mindset into engineering education. It equips educators with flexible tools and open educational resources to help train future engineers to proactively address complex global challenges, such as climate change, inequality, and resource depletion. Key Features of the Guide:

Competency Framework: The curriculum is built upon 12 core sustainable competencies that directly align with the 17 Sustainable Development Goals (SDGs).

Modular Structure: The coursework is organised into four thematic modules: Transversal Skills for Sustainable Engineering Leadership, Holistic Engineering for Impact, Life Cycle Assessment, and Innovating for Global Challenges.

Scalable Activities: Educators can implement resources across three levels of complexity—Basic (Level 1), Advanced (Level 2), and Integrative (Level 3)—allowing them to adapt the time commitment to fit their syllabus.

Active Learning Focus: The framework highlights 22 engaging teaching pedagogies, including problem-based learning, gamification, and microlearning. These approaches are optimised for delivery across in-class, digital, and hybrid learning environments.



Built for Flexibility and Impact

We know that every engineering faculty operates differently. That is why these resources were built to be entirely adaptable.

Progressive Learning: Each module features activities structured across three levels: Basic (knowledge and theory), Advanced (application and analysis), and Integration (professional-level scenarios).

Comprehensive Content: The modules are designed to take students through 315 to 540 minutes of learning content.

Ready for Any Classroom: The suite is accompanied by a dedicated Educator's Guide, providing clear instructions for delivering the content in classroom, online, or hybrid formats.

EESF on the an EU wide stage

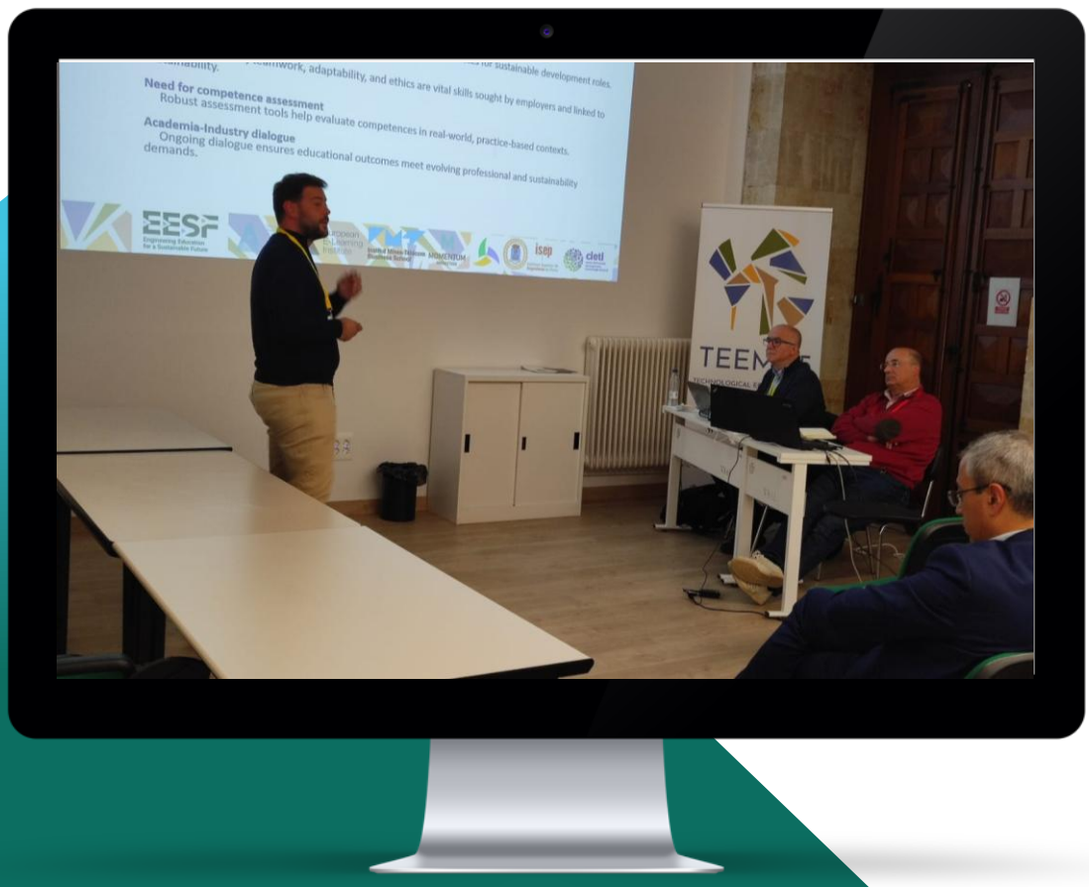
Academic Excellence & Peer Review at TEEM 2025

We are proud to share that the EESF project was featured at the 13th Technological Ecosystems for Enhancing Multiculturality (TEEM 2025) conference, held at the University of Salamanca, Spain, from 21–24 October 2025.

Partner P.Porto team presented the paper: "Outlining a case study for embedding sustainability competences." This work details our methodology for bridging the gap between industry needs and academic curricula, specifically focusing on how the EESF OERs provide a "solution" for educators like our colleague George, who seek to integrate SDGs without overwhelming their existing syllabus.

Key Highlights from the Conference:

- Global Community: The event provided a face-to-face forum to share our innovative learning practices with an international research community.
- Scientific Impact: The paper will be published in the Springer Book Series "Lecture Notes in Educational Technology" and indexed in SCOPUS, ensuring the EESF methodology has a lasting academic legacy.
- Validation: Presentation of our 22 teaching pedagogies (from gamification to microlearning) received vital feedback from global experts in educational technology.



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