

‘Engineers without Borders’

1) Name of institution

Aston University

2) Name of the initiative

Engineering for People Design Challenge

3) Initiative outline

The previously voluntary [Engineering for People Design Challenge](#) has been integrated into the core learning of two engineering programmes. Students can now experience the learning from these challenges through an ‘Interdisciplinary Design Project’ (Year 1 Engineering and Science) module and a ‘Global Engineering Project’ (Foundation Year) module.

4) Context/history/need for initiative

For more than four years, Aston University delivered the Engineers Without Borders (EWB) Engineering for People Design Challenge as an optional, volunteer-based activity during Reading Week. Following a final poster presentation, selected teams continued to develop their work for submission to the national EWB competition.

Following a curriculum review, Aston University introduced a new interdisciplinary approach to engineering and science education with a stronger emphasis on sustainability, collaboration and global responsibility. As part of this transformation, the EWB Design Challenge was embedded within the Year 1 Interdisciplinary Design Project module, making it accessible to approximately 1,500 engineering and science students annually. The challenge was also incorporated into the Foundation Year Global Engineering Project module, where students can select it as one of several sustainability-focused project options.

5) What happens and how it is assessed

Students work in interdisciplinary teams using the annual Engineers Without Borders UK design brief to develop solutions to real-world challenges. Over a period of five to six weeks, teams research the context of the problem, consider stakeholder needs, develop and evaluate potential solutions, and communicate their proposals through a poster and presentation. Project outputs require students to address sustainability, ethics, stakeholder engagement, design analysis, future recommendations and personal reflection. Assessment is via group poster preparation and presentation.

6) Green Skills developed or applied

Students develop a range of green skills, including systems thinking, sustainable design, stakeholder engagement, teamwork, communication, ethical decision-making and global citizenship.

The interdisciplinary nature of the module encourages students to consider technical, environmental, social and economic dimensions of engineering challenges simultaneously.

7) Contributions to leverage points

The case study aligns particularly with Leverage Point 1 (Natural Resources and Just Transition Solutions), Leverage Point 2 (Stakeholder Communication and Engagement), Leverage Point 5 (Organisational Model Innovation and Transformation), and Leverage Point 7 (Futures Literacy Through a Values-Based Mindset).

8) Impact, successes, challenges

One of the strengths of this approach has been the ability to scale sustainability-focused learning from a small voluntary activity to a curriculum-embedded experience reaching a large and diverse student cohort.

As the curriculum changes are recent, formal evaluation is ongoing. However, the transition from a voluntary challenge to a curriculum-integrated learning experience demonstrates one approach to embedding sustainability and green skills at scale within STEM education. By moving beyond optional participation and into core teaching, institutions can provide all students with opportunities to engage with authentic global challenges and develop the competencies needed for future green careers.

9) Advice for others

Institutions considering similar initiatives may find it beneficial to begin with established, voluntary, challenge-based learning frameworks, such as the Engineers Without Borders Design Challenge, before scaling them into the curriculum. Embedding sustainability within assessed activities can help ensure that all students engage with green skills, while interdisciplinary teamwork provides opportunities for students to consider environmental, social and economic perspectives when developing solutions to complex global challenges.