

Guidance for Mainstreaming Education for Sustainable Development across Undergraduate and Postgraduate Taught Curricula

1. Background

The University of Strathclyde has committed to embedding Education for Sustainable Development (ESD) across all programme-level learning outcomes by June 2026. This move aligns with both the University's socially progressive values and sector-wide acknowledgement of the need to imbue graduates with the knowledge, skills, values and attributes necessary to tackle complex global sustainability challenges. The Quality Assurance Agency's Subject Benchmark Statements are being revised to include the introduction of four cross-cutting themes:

- Education for Sustainable Development
- Equality, Diversity and Inclusion
- Accessibility and the needs of disabled students
- Employability, entrepreneurship and enterprise education

The three dimensions of Sustainable Development – Society, Economy and Environment –bring together these four themes. The United Nations Sustainable Development Goals (SDGs) present a useful framework for understanding the interconnectedness of Goals across the three dimensions of Sustainable Development. For example, ensuring Quality Education for all (SDG 4) can help promote Gender Equality (SDG 5) and Reduce Inequalities (SDG 10) more broadly. By embedding ESD in teaching, we can ensure our approach to employability, entrepreneurship and enterprise education takes into consideration related SDGs such as Responsible Consumption and Production (SDG 12).

1a. What do we mean by ESD?

Education for Sustainable Development (ESD) is a transformative approach to education, which seeks to imbue students with the knowledge, skills and competencies needed to fully address complex real-world sustainability challenges, create change and ensure no one is left behind. Unlike Education *about* Sustainable Development, which treats 'Sustainable Development' as a subject that students learn about 'through extensive reading, listening, and memorising' (Kreber 2009), Education *for* Sustainable Development is a transformational approach to learning that should empower students to become agents in enacting the systemic change required to meet the complex global sustainability challenges they will encounter throughout their personal, civic and professional lives. This focus on transformational, active learning enables students to develop the skills and competencies necessary to achieve this.

1b. What do we mean by mainstreaming ESD?

Mainstreaming ESD means actively integrating the principles and practices of ESD into all aspects of educational delivery associated with all existing and future

programmes at Strathclyde. Ensuring ESD is effectively 'placed at the heart of our curricula' (Vision 2025) and sustainable development made relevant to all Strathclyde students in line with our Vision 2025 commitment will require us to go beyond treating ESD as an adjunct, thematic topic.

The focus of our ESD mainstreaming activity will be on Undergraduate and Postgraduate Taught programme level learning outcomes across all faculties, where we would look to ensure that there is a meaningful and prominent level of ESD embedded within every degree programme.

1c. Overview of Guidance

This guidance provides a proposed approach to mainstreaming ESD and aims to assist programme teams, Faculties and Departments in developing an Action Plan suited to their own disciplinary contexts. It will detail some initial steps to take in order to understand where ESD already sits within programmes and give an overview of pedagogical and assessment approaches that complement ESD, as well as the UNESCO key competencies for sustainability. Finally, the plan suggests ways of engaging the Student Voice in action plan development and links to training, support and resources available.

The Guidance applies to a proposed structure whereby Action Plans are created at Department level with Faculty oversight.

2. Initial Steps

ESD will be present in curricula already, and the move to embedding ESD in programme learning outcomes should primarily represent a reframing of existing syllabi, rather than a complete overhaul. Some initial steps programme teams, Faculties and Departments can take to prepare for ESD mainstreaming are:

2a. Curriculum Mapping

The Centre for Sustainable Development has developed an ESD curriculum mapping tool that enables Faculties and Departments to see where ESD is present at module level and more broadly at programme level. The tool tracks what ESD and entrepreneurial competencies are developed in the module, which SDGs are addressed, and which teaching methods are employed. The tool also allows programme leaders and teams to see results on a dashboard in order to gain a broad oversight of ESD embeddedness.

2b. Programme Review

The mapping tool is therefore able to highlight where there are opportunities to include ESD in curricula and update curricula during Programme Review. This might include altering learning outcomes and rethinking assessment requirements.

2c. Developing a Programme ESD Action Plan

Following the above, a Programme ESD Action Plan should be put in place. This should consider the following:

- Who will be responsible for delivering the Action Plan?
- Will a working group be created?
- What would the working group's membership be?
- Could Departmental Champions be installed?
- It is recommended that students are included in programme review – how will student voice be incorporated?
- It is recommended that employers are included in programme review – how will employers' views be incorporated?
- What are the key goals and focus areas of the Action Plan?
- What considerations are specific to your Faculty?
- What are the timelines?
- How will progress be monitored, tracked and evaluated?
- What support, training and resource is needed to deliver the Action Plan?

3. Practical Guidance for Mainstreaming ESD

3a. Sustainable Development Goals (SDGs)

The United Nations [Sustainable Development Goals](#) (SDGs) provide a useful framework for understanding the interrelated nature of issues that impede Sustainable Development. The SDGs represent 17 challenges outlined by the UN as necessary to achieve by 2030 if we're to have a sustainable future.

The 17 goals can be broadly divided into 3 categories based on their core priorities: the economy (which includes goals focused on infrastructure, reducing inequality, and sustainable growth and consumption), society (including goals that seek to alleviate hunger and poverty, ensure quality education for all, clean energy access, and good health) and the biosphere (which includes goals that address life on land, life under water and climate change).

The goals therefore represent a useful framework for engaging with Sustainable Development and setting the scene around what Sustainable Development is about, as well as identifying disciplinary links to Sustainable Development.

3b. Competencies

In order to face the complex challenges outlined by the SDGs, it is important that students are equipped with not only knowledge but also skills and competencies in sustainable development. This is a key difference between education *about* sustainable development and education *for* sustainable development: learners can't be taught competencies; instead, they have to be given space in the curriculum to develop them.

The 8 key competencies for sustainability defined by UNESCO can be broadly categorised under 3 headings: Ways of Thinking, Ways of Being, and Ways of Doing, which is also referred to as the Head, Heart and Hands framework. This transformative approach to learning aims to enable critical reflection, relational knowing and active engagement. The table below outlines this competency framework.

Competency	A student who displays this competency can:	
Systems Thinking Competency	<ul style="list-style-type: none"> -Recognise and understand relationships -Analyse complex systems -Consider how systems are embedded within different domains and scales -Deal with uncertainty 	Ways of thinking
Anticipatory Competency (Future Thinking)	<ul style="list-style-type: none"> -Understand and evaluate multiple outcomes -Create their own visions for the future -Apply the precautionary principle -Assess the consequences of actions -Deal with risks and changes 	
Critical Thinking Competency	<ul style="list-style-type: none"> -Question norms, practices and opinions -Reflect on one's own values, perceptions and actions -Take a position in the sustainable development discourse 	
Strategic Competency	- Develop and implement innovative actions that further sustainable development at the local level and further afield	Ways of Practicing
Collaboration Competency	<ul style="list-style-type: none"> - Learn from others (including peers, and other inside and outside of their institution) -Understand and respect the needs, perspectives and actions of others -Deal with conflicts in a group -Facilitate collaborative and participatory problem solving 	
Integrated Problem-Solving Competency	<ul style="list-style-type: none"> -Apply different problem-solving frameworks to complex sustainable development problems -Develop viable, inclusive, and equitable solutions -Utilise appropriate competencies to solve problems 	

Self Awareness Competency	<ul style="list-style-type: none"> -Reflect on their own values, perceptions and actions -Reflect on their own role in the local community and in global society -Continually evaluate and further motivate their actions -Deal with their feelings and desires 	Ways of Being
Normative Competency	<ul style="list-style-type: none"> - Understand and reflect on the norms and values that underlie one's actions - Negotiate sustainable development values, principles, goals and targets, in a context of conflicts of interest and trade-offs, uncertain knowledge and contradictions 	

3c. Developing Learning Objectives for ESD

The SDGs and the UNESCO competency framework present a useful starting point for developing learning objectives that meet disciplinary/degree requirements. Recontextualising existing learning objectives with these frameworks and the below guidance in mind will enable programme teams to see where ESD-related learning objectives are potentially already being met, and where they can be drawn out. In order to achieve new, ESD-focused learning objectives it may be necessary to employ new pedagogical approaches.

Additional guidance on embedding ESD in learning objectives can be found here:

- [QAA and Advance HE's Education for Sustainable Development Guidance](#)
- [Professional Standards Framework](#)

3d. Pedagogical Approaches and Assessment

ESD mainstreaming requires a change in not only what we teach but how we teach, in order to enable students to develop their ESD competencies. Some suggested approaches include:

- Problem-based Learning (PBL): Students are given a discipline-appropriate real-world sustainability problem to address, considering potential positive and negative outcomes
- Case studies: can facilitate discussion and analysis of a real-world problem and enable students to apply their skills and understanding
- Reflection: requiring students to reflect on the skills they are developing aids them in understanding, evidencing and articulating their competencies
- Debate: can allow students to discuss controversial subjects and understand competing viewpoints, as well as trade-offs
- Competency-based assessment: evaluates students on the practical application of their knowledge and demonstration of skills and understanding
- Collaborative working: enables students to gain experience of working with others and negotiating differences

- Interdisciplinary learning: allows students to draw upon a range of subjects beyond their discipline and understand the need for a varied perspectives
- Transdisciplinary learning: involves teaching not just across but between disciplines, requiring collaboration and cooperation

4. Development, Resources and Support

4a. Student Voice

The student voice should be central to this work. There are several ways to engage students in Action Plan delivery:

- Engage students in contributing to the development work through internships, placements and special projects, including credit-bearing dissertation projects and paid internships such as [Research Interns @ Strathclyde](#) summer projects
- Via Student-Staff Liaison Committees
- Via the Module/Programme Representative structure
- Student focus group
- Discussions with recent graduates

Additional support for students can be found via [SPARQS](#) and [Strath Union](#).

4b. Resources

The following internal and external resources are available to assist in the development and implementation of Action Plans:

- [SD500: Introduction to Sustainable Development](#), a training module developed by the Centre for Sustainable Development and available to all staff and students via Myplace
- The Centre for Sustainable Development's ESD Mapping Toolkit
- [The Sustainable Development Goals Learning Objectives](#)
- The [CoDesignS ESD Toolkit](#), a framework that provides an easy to implement pedagogic method for embedding ESD in curriculum design using a co-design and co-creation approach. The Toolkit is based on UNESCO's key competencies for sustainability and QAA and Advance HE's ESD Guidance.
- [ESD Resources SharePoint site](#)
- [The Engineering Professors Council's Sustainability Toolkit](#)
- [QAA and Advance HE's Education for Sustainable Development Guidance](#)
- [Professional Standards Framework](#)
- Discipline-specific guidance may also be available; for example, an increasing number of accrediting and professional bodies now require programmes to deliver ESD.

References

Kreber, C., 2009b. Supporting Student Learning in the Context of Diversity, Complexity and Uncertainty. In: Kreber, eds. The University and its Disciplines: Teaching and learning within and beyond disciplinary boundaries. New York: Routledge, 19-30.