

# A Quick Guide to Education for Sustainability

*“What if education systems prepared learners to enter the workforce as well as handle a crisis, be resilient, become responsible citizens, adapt to change, recognize and solve local problems with global roots, meet other cultures with respect, and create a peaceful and sustainable society? Then we would be educating for a more sustainable future.”*  
(UNESCO)

## What on earth is it all about?

Sustainable development is the process that enables humanity to move towards an environmentally, socially, economically and culturally sustainable world. Education for Sustainable Development (ESD), also known as Education for Sustainability (EFS), is an umbrella term for many forms of education that already exist and is interrelated with the concept of Global Citizenship. It promotes a rethink of educational programmes and systems (both contents and methods) that currently support unsustainable societies. The United Nations’ Decade of Education for Sustainable Development (2005-2016) has set out to coordinate and stimulate initiatives around the world. In the UK, HEFCE and the HEA are acknowledging the importance of EFS and are committed to supporting its development through grants and coordinating initiatives.

## Why at the University of Exeter?

The Government’s Chief Scientific Advisor Prof Sir John Beddington has raised the prospect of a “Perfect Storm” of global dimensions by 2030, with the impacts of global challenges such as climate change, food, energy and water security coming together to significantly impact on the lives of all people on earth. This prospect invites a response from researchers and educators alike to find solutions for a more sustainable society. A research-intensive university, Exeter is committed to sustainability. It has invested in important research themes such as Climate Change and Sustainable Futures and the Environment and Sustainability Institute in Cornwall. This world leading research is mirrored in a growing suite of sustainability programmes and modules, including the One Planet MBA and introductory modules such as Global Futures and Geographies of Environment and Sustainability.

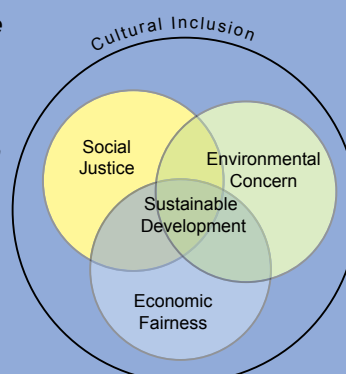
## What does it mean in the context of a discipline?

Sustainability has relevance to nearly every discipline, whether it is accounting (environmental audits), mathematics (climate modelling) or psychology (understanding behaviours). However, whether your teaching has direct relevance to sustainability or not, students will look to you for encouragement to act as a responsible citizen. This encompasses culturally inclusive behaviour as well as environmentally sound practices. Research<sup>1</sup> has found that lecturers have a strong influence on students in generating a positive interest in sustainability issues as well practical behaviours such as energy preservation. However, if no references are made to sustainability, it is understood by students as a discouragement.

## What are the underpinning values?

The values for sustainability are founded in social and economic justice, environmental responsibility and positive dispositions towards cultural diversity. The Earth Charter, a declaration of fundamental ethical principles for building a just, sustainable and peaceful global society in the 21st century, sums up the motivation for EFS:

*We stand at a critical moment in Earth’s history, a time when humanity must choose its future. As the world becomes increasingly interdependent and fragile, the future at once holds great peril and great promise. To move forward we must recognize that in the midst of a magnificent diversity of cultures and life forms we are one human family and one Earth community with a common destiny. We must join together to bring forth a sustainable global society founded on respect for nature, universal human rights, economic justice, and a culture of peace. (Preamble Earth Charter)*



## What topics can we associate with ‘sustainability’?

The word ‘sustainability’ comes with multiple meanings and interpretations, often depending on cultural context and generational differences. Here are a few topics that are associated with sustainability:

### Business School

- Accounting for Sustainability
- Biomimicry
- Carbon Neutral
- Carbon Trading
- Carbon Tax
- Change Management
- Cultural Diversity
- Cradle-to-Cradle Design
- Corporate Social Responsibility
- Ecosystem Services
- Eco tourism
- Energy Security
- Environmental Legislation
- Ethical Behaviour
- Environmental Accounting
- Environmental Auditing
- Environmental Management Systems
- Ethical Investment
- Fair Trade
- Fossil Fuel Dependency
- Green Energy
- Green Economy
- Net Impact
- One Planet Economy
- Resource scarcity
- Risk assessment
- Sustainable Supply Chain
- Sustainable Tourism
- Systems Thinking

### Engineering, Mathematics and Physics

- Camborne School of Mines
- Ethical mining
- Rare Earth Minerals
- Renewable energy
- Sustainable mining
- Engineering
- Biomimicry design
- Clean technology
- Cradle-to-cradle design
- Environmental Management Systems
- Flood mitigation
- Water security
- Mathematics
- Climate modelling
- Climate Change
- Global Warming
- Geo-engineering
- Physics
- Nano-technology
- Nuclear energy
- Nuclear fusion
- Materials innovation (e.g. Graphene)

## How much does a student need to know about sustainability?

The University is seeking to equip all students with a basic level of sustainability literacy. Just as employers expect graduates to have a basic level of IT literacy, similarly they prefer graduates who have an understanding of sustainability issues and behaviours. Driven by legislation as well as ethics, businesses and non-profit organisations alike need to respond to carbon, energy, water and waste issues.

In addition to this basic level of knowledge and understanding, students who aspire to become specialists can study sustainability in more depth through sustainability pathways, elective modules and postgraduate programmes. Students have the opportunity to become specialists in a narrow discipline, for example in Renewable Energy or Ecology. They can also specialise in broader sustainable development programmes such as the Msc Sustainable Development or the One Planet MBA.

## What does this mean for the way we teach?

Putting the future of the student at the centre, EfS is based on respect for the learner and the learner's journey. Going further than the transfer of knowledge, it challenges the learner's pre-conceptions about global issues and encourages the exploration of values systems and attitudes. The following teaching approaches are associated with EfS:

### **Action learning:**

An educational process whereby the participant studies their own actions and experience in order to improve performance. Learners acquire knowledge through practice-based activities, rather than through traditional instruction.

### **Experiential learning:**

To acquire and apply knowledge, skills and relate to feelings in an immediate and relevant setting or learning that is achieved through reflection upon everyday experience. Here learning is not sponsored by some formal educational institution but by people themselves.

### **Transformational Learning:**

Learning that takes learners' knowledge and skills into a different domain and leads to questioning of accepted assumptions and views and to new ways of knowing, understanding and acting.

### **Research inspired learning / Problem based learning:**

A student-centered pedagogy in which students learn about a subject in the context of complex, multifaceted and realistic problems. Working in groups, students identify what they already know, what they need to know, and how and where to access new information that may lead to resolution of the problem. The role of the instructor shifts to become that of a facilitator of learning.

## Advice and help

### **Internal**

Harriet Sjerps-Jones (Curriculum)

H.Sjerps-Jones@exeter.ac.uk

Karen Gallagher (Campus & Operations)

K.M.Gallagher@exeter.ac.uk

### **External**

#### **Communities of Practice:**

- [Green ICT](#) (JISC)
- [Sustainable labs](#) (HEEPI)
- [Sustainability in Higher Education Developers](#) (SHED)
- [Environmental Association of Universities and Colleges](#) (EAUC)

For free membership contact Karen Gallagher

### **Further reading**

'Earth in Mind' by David Orr

'Sustainability Education' by Jones, Selby and Sterling

'The Sustainability Curriculum: The Challenge for Higher Education' by Blewitt and Cullingford

### **Free HEA resources:**

[Handbook of Sustainability Literacy](#)

## Humanities

Cultural diversity  
Cultural Ecology  
Identities & place  
Displacement  
[Ecocriticism](#)  
[Eco literature](#)  
Eco-literacy  
Emerging Language of Global and Environmental Change  
Environment and Identity  
Ethical behaviour  
Past Environments  
Nature writing  
Non-violent communication  
Sustainable Futures  
[Sustainability Literacy](#)  
Systems Thinking

## Life & Environmental Sciences

Climate Change  
[Ecocide](#)  
[Ecosystem Services](#)  
Pollution  
**Biosciences**  
[Biodiversity, Protection/loss of](#)  
Carbon Capture  
Desertification  
Genetic Modification  
[Migrations, animal](#)  
Toxicology  
**Geography**  
[Agenda 21](#)  
Carbon Footprint  
[Carbon Reduction Targets](#)  
Carbon Capture  
Carbon Cycle  
[Climate Change Refugees](#)  
Climate Change Mitigation  
Desertification / Deforestation  
Energy policy  
Environmental auditing  
Environmental Management Systems  
Energy security  
Future proofing  
[Gaia Theory](#)  
Global Village  
Greenhouse gasses  
[Millennium Development Goals](#)  
NIMBYism / Public Engagements  
Rising Sea levels  
[Risk Assessment](#)  
[Soil erosion](#)  
[Transition Movement](#)  
Urbanisation  
**Psychology**  
Behavioural change  
**Sport & Health Sciences**  
Blue Gym /Green Gym  
Healthy lifestyles / Wellbeing  
**Social Sciences and International Studies**  
Conflict resolution  
[Development Education](#)  
[Earth Charter](#)  
[Eco-islam / Green Deen](#)  
[Ecocide](#)  
Energy Security  
Education paradigms for sustainability and global citizenship  
[Environmental Compliance](#)  
[Environmental Law](#)  
Environmental policy  
Ethics  
[EU Environmental Legislation](#)  
[Food Security /Water Security/](#)  
[Global Citizenship Education](#)  
Human Rights  
Interfaith Dialogue  
International Law and Treaties  
Peace Studies

