

Leader: Phil Callaghan

Timing: Lent Term

Structure: 6 x 2.5 hour sessions 6th – 14th January (pre Term) including role play sessions

Synopsis

This module explores the role of government, policy and legislation in shaping and delivering sustainable development and will draw out the key aspects that are relevant for engineering. The focus will be on how governments are addressing the key global sustainability challenges, and in particular, look at how governments can square the pursuit of economic growth with the need to respect ecological limits and ensure social progress.

The historical context of sustainability will be explored from the earliest responses by Victorian society to environmental problems, through to the development of an international consensus around sustainable development and look ahead at the future for sustainable development as the world emerges from financial crisis.

The political context will be examined through international, national and local decision-making processes, and issues, such as climate change, biodiversity loss and waste, will be used to bring these processes to life. The module will provide an overview of United Nations and European Union and United Kingdom decision-making architecture and highlight the role of evidence, stakeholders and metrics.

The module will examine the available policy tools ranging from information to market instruments to regulation. The development and use of *ex ante* and *ex post* appraisal techniques will be considered as well as the provision and use of scientific evidence.

Content

Context: Appreciating the 'bigger picture', in particular, how the dominant 'economic growth' ideology and consequent power relations impact on the development of policy on sustainability. Ecological limits, past and future population growth and technological development. Eco-centric, bio-centric and anthropocentric worldviews and values.

Evidence: The provision and application of knowledge to sustainability problems. The politics of climate change science. Coping with uncertainty and complexity. Accounting for economic, environmental and social dimensions. 'Limits to Growth'. 'Millennium Ecosystem Assessment'.

Politics: How the agenda gets set. Government decision-making architecture: international, national and local. Power and influence: government, business and civil society. Developed and developing country perspectives. The 'Policy Circle'. Policy instruments and tools.

Responses: Multilateral Environmental Agreements. Key policies: emissions trading; regulations and standards; carbon tax; voluntary agreements; behavioural change. Stimulating innovation.

Metrics: Policy Appraisal. Sustainability indicators. Human Development Index. Gross Domestic Product: strengths and weaknesses. Ecological and carbon footprints. Mass balance. Happiness Index.

Impact: Monitoring and Evaluation; quantitative and qualitative; Tipping Points; Incremental and Systemic change.

Objectives

- To understand the role and impact of governments and their policies on sustainability
- To appreciate the context within which policy is made and understand how policy can be influenced
- To understand how engineering can maximise the benefits and minimise the harm of policy on business and projects

Assessment 100% coursework