WM9P8-15 Sustainability

23/24

Department
WMG
Level
Taught Postgraduate Level
Module leader
Phil Lewis
Credit value
15
Assessment
Multiple
Study location
Azerbaijan State Oil & Industry University, Baku, Azerbaijan

Description

Introductory description

This module provides the theoretical basis and wider context of sustainability and sustainable development within which the subject of renewable energy is located. In particular students will examine and explore the social and business challenges presented by the UN Sustainability Development Goals. It will provide the necessary knowledge and understanding for student to design organisational processes and strategies to address these challenges. The module will be delivered through a combination of face-to-face lectures, seminars and online guided synchronous and asynchronous learning.

Module aims

To provide an understanding of the challenges presented to renewable energy engineering enterprises by the quest for more sustainable development, together with practical experience in the design and/or realisation of processes responding to those challenges.

Outline syllabus

This is an indicative module outline only to give an indication of the sort of topics that may be covered. Actual sessions held may differ.

- Carbon science and cycle
- Climate change

- Ecosystems
- Environmental challenges of limited resources
- The role of the United Nations and its Sustainability Development Goals
- Working with standards and regulations such as ISO14001
- Life cycle analysis
- Principles of the “Circular Economy”, engineering waste and recycling
- Carbon trading
- Ethical and commercial concerns of sustainability
- Corporate, social, and engineering responsibility
- Socio-technical aspects of sustainability and renewable energy

Learning outcomes

By the end of the module, students should be able to:

- Develop a critical understanding of the theoretical basis of sustainability as applicable to a business environment.
- Analyse and evaluate the applicability and impact of the UN Sustainable Development Goals, for an organisation working in the renewable energy sector.
- Calculate, analyse and evaluate the energy performance of, and the sustainability challenges facing, a renewable energy engineering organisation and in response develop a CSR (Corporate and Social Responsibility) strategy appropriate for that organisation.
- Evaluate the environmental and societal impact of solutions to complex problems using Life Cycle Analysis to assess embedded carbon in systems, products and processes.

Indicative reading list

Reading lists can be found in Talis

International

This module is part of the MSc Renewable Energy program delivered at the Azerbaijan State Oil & Industry University in Baku, Azerbaijan.

Subject specific skills

- Life cycle analysis
- Interpretation of engineering data
- Carbon foot printing
- Energy efficiency calculations

Transferable skills

- Evaluation and judgement
- Communication

- Critical thinking
- Reasoning
- Decision making
- Presentational skills

Study

Study time

Type	Required
Lectures	21 sessions of 1 hour (18%)
Seminars	9 sessions of 1 hour (8%)
Online learning (scheduled sessions)	24 sessions of 1 hour (21%)
Assessment	60 hours (53%)
Total	114 hours

Private study description

Directed by a module study guide issued at the start of the module. This will direct students to relevant text and journal readings and other learning activities, including flipped classroom activities, with indicative time allocations for each.

Costs

No further costs have been identified for this module.

Assessment

You must pass all assessment components to pass the module.

Assessment group A

	Weighting	Study time	Eligible for self-certification
A Life Cycle Analysis Coursework	25%	15 hours	Yes (extension)
Assignment	75%	45 hours	Yes (extension)

A case study report that covers the sustainability and energy efficiency performance of an organisation operating in the renewable energy sector, in respect of sector best practice and the

	Weighting	Study time	Eligible for self-certification
UN’s Sustainability Development Goals.			

Assessment group R

	Weighting	Study time	Eligible for self-certification
A Life Cycle Analysis	25%	15 hours	No
Assignment	75%	45 hours	No

Feedback on assessment

- Verbal feedback given during seminar/tutorial sessions,
- Written individual formative feedback on the 1st assignment report

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Availability

There is currently no information about the courses for which this module is core or optional.