

EV7130 Module Specification

Module Title: International Zero CO ₂ Energy	Module Code: EV7130 Level: 7 Credit: 15 ECTS credit: 7.5	Module Leader: Alan Owen
Pre-requisite: none	Pre-cursor: none	
Co-requisite: none	Excluded combinations: none	Suitable for incoming study abroad? N
Location of delivery: CAT and online – blended delivery		
<p style="text-align: center;">Summary of module for applicants:</p> <p>In this module we will consider the energy requirements and carbon emissions of different international contexts and their potential to provide meet their energy needs more sustainably. Within the module students will:</p> <ul style="list-style-type: none"> • Analyse energy related CO₂ emissions in a global context • Form a critical appreciation of, and interconnections between, Minority World and Majority World energy demand, provision and resource availability • Analyse and develop scenarios of future global energy provision and demand in short, medium and long-term contexts 		
<p style="text-align: center;">Main topics of study:</p> <ul style="list-style-type: none"> • Existing global CO₂ emissions related to energy provision and demand • Applicability of emerging sustainable energy systems to Majority World nations • Justice, ethics and responsibilities in global energy provision, including the role of states, corporations and the third sector in energy provision transition • Environmental and social impacts of energy provision as experienced across international and interregional boundaries • Funding and economics of global energy provision transition; • Examples of technical and nature-based solutions 		
<p>This module will be able to demonstrate at least one of the following examples/ exposures</p> <p>Live, applied project <input type="checkbox"/></p> <p>Company/engagement visits <input checked="" type="checkbox"/></p> <p>Company/industry sector endorsement/badging/sponsorship/award <input type="checkbox"/></p>		
<p>Learning Outcomes for the module</p> <ul style="list-style-type: none"> • <i>Digital Proficiency - Code = (DP)</i> • <i>Industry Connections - Code = (IC)</i> • <i>Social & Emotional Intelligence - Code = (SEI)</i> • <i>Physical Intelligence - Code = (PI)</i> • <i>Cultural Intelligence - Code = (CI)</i> • <i>Community Connections & UEL Give Back - Code = (CC)</i> • <i>Cognitive Intelligence – Code = (COI)</i> • <i>Enterprise and Entrepreneurship (EE)</i> <p>At the end of this module, students will be able to:</p> <p>Knowledge</p> <ol style="list-style-type: none"> 1. Demonstrate a critical understanding of key aspects of global energy provision and demand in the context of CO₂ emissions (<i>SEI</i>), (<i>COI</i>) <p>Thinking skills</p>		

2. Critically appraise selected technological and resource availability challenges of future global energy provision and demand management (COI)
3. Critically appraise the justice and responsibility impacts of extraction, manufacture, transport, use, end of life outcome, and social change (COI) (CI) (SEI)

Subject-based practical skills

4. Systematically analyse and synthesise relationships between global energy provision and demand, in the context of future benefits and impacts on CO₂ emissions (COI)
5. Use data to support a global energy-related CO₂ futuring argument (COI)

Skills for life and work

6. Communicate effectively to a team, peer or a wider audience. (SEI)

Teaching/ learning methods/strategies used to enable the achievement of learning outcomes: For students studying onsite and by distance learning (blended delivery):

The factual content of the module is taught through lectures, seminars, practical workshops, presentations, demonstrations and tutorials, and throughout this process an active exchange of views and opinions is encouraged. Students have access to MS Teams where they can access recorded and written support material, meet with their peers and a tutor to discuss any academic issue. Both theoretical and practical aspects are covered both onsite and through interactive sessions on Teams.

There is a formative learning element to the module to allow the students to receive critical feedback on their work without the pressure of marked assessment.

For distance learning (DL) students, learning will be supported through streamed and recorded Internet-based lectures (of the onsite lectures), situation related practical exercises, seminars and tutorials.

Lectures onsite and through MS Teams highlight key concepts, models and frameworks, and integrate additional resources (such as journal articles). They encourage deep learning through the use of self-assessment questions which encourage students to engage with the topic, to help students understand new topics and skills

Assessment methods which enable students to demonstrate the learning outcomes for the module:	Weighting:	Learning Outcomes demonstrated:
Report (3000 words) Choice of focus within range of module	100%	1,2,3,4,5,6

Reading and resources for the module: These must be up to date and presented in correct Harvard format unless a Professional Body specifically requires a different format

Core

- Armstrong J., 2021, *The Future of Energy: The 2021 guide to the energy transition - renewable energy, energy technology, sustainability, hydrogen and more*. Energy Technology Publishing, ISBN-10: 1838388605
- Hafner, M. and Tagliapietra, S. (2020) *The Geopolitics of the Global Energy Transition*. Cham: Springer International Publishing AG
- Sovacool, B.K., Dworkin, M.H., 2014 *Global Energy Justice, Problems, Principles, and Practices*, Cambridge University Press, <https://doi.org/10.1017/CBO9781107323605>

Recommended

- Introductory links to global NGO outputs for example:
 - OECD https://www.oecd-ilibrary.org/energy/key-world-energy-statistics-2021_2ef8cebc-en
 - United Nations <https://www.un.org/en/>

- World Resources Institute: <https://wriorg.s3.amazonaws.com/s3fs-public/uploads/wri-strategic-plan-2018-22.pdf>
- Sorensen B 2017 *Renewable Energy: Physics, Engineering, Environmental Impacts, Economics and Planning* <https://www.sciencedirect.com/book/9780128045671/renewable-energy>
- Hampshire-Waugh, M. 2021, *CLIMATE CHANGE and the road to NET-ZERO: Science • Technology • Economics • Politics*, Crowstone Publishing, ISBN:1527287963
- Doerr, J., 2021, *Speed & Scale: A Global Action Plan for Solving Our Climate Crisis Now*, Penguin Business, , ISBN-10 : 0241537770
- Cherian, A. (2015) *Energy and global climate change: bridging the sustainable development divide*. 1st ed. West Sussex, England: Wiley Blackwell.

Provide evidence of how this module will be able to demonstrate at least one of the following examples/ exposures

Live, applied project

Company/engagement visits
We will expect to include at least one external lecturer from an NGO in this field

Company/industry sector endorsement/badging/sponsorship/award

Indicative learning and teaching time (10 hrs per credit):	Activity
1. Student/tutor interaction:	Lectures, seminars, tutorials, presentations, demonstrations (onsite and interactive online) 30 hours
2. Student self learning and research time:	Seminar reading and preparation, assignment preparation, background reading, and research activities. 120 hours
Total hours:	150 hours

For office use only. (Not required for Programme Handbook)

Assessment Pattern for Unistats KIS (Key Information Sets)	Weighting:
Coursework (<i>written assignment, dissertation, portfolio, project output</i>)	
Practical Exam (<i>oral assessment, presentation, practical skills assessment</i>)	
Written Exam	

HECoS Code:	
UEL Department:	