

Module Code	CE7J04
Module Name	J4: Energy Policy and Energy Storage
ECTS Weighting¹	5 ECTS
Semester taught	Semester 1
Module Coordinator/s	Prof. Sarah McCormack Other lecturer(s): Prof. Brian Caulfield Asst. Prof Mohammad Reza Ghaani
<u>Module Learning Outcomes</u> with reference to the <u>Graduate Attributes</u> and how they are developed in discipline	<p>On successful completion of this module, students should be able to:</p> <p>LO1. Develop and discuss the main areas of energy policy. LO2. Understand requirements for LEED/Zero Energy and Net Passive buildings. LO3. Evaluate energy projects using economic analysis tools. LO4. Compare and evaluate various energy storage technologies in terms of their strengths, limitations, and cost-effectiveness for different energy systems and applications. LO5. Design energy storage systems to support grid stability, integrate renewable energy sources, and optimize energy dispatch and management. LO6. Evaluate the environmental sustainability of energy storage technologies, considering factors like resource utilization, emissions, and end-of-life management.</p> <p>Graduate Attributes: levels of attainment</p> <p>To act responsibly - Introduced To think independently - Attained To develop continuously - Enhanced To communicate effectively - Enhanced</p>
Module Content	This module is an optional module which runs in the first semester. The module will develop knowledge in current energy policy and our energy storage options. It will include topics in energy economics, policy, energy storage options and circular economy and sustainability in storage systems will be addressed.

Teaching and Learning Methods	Core content via lectures Individual assignments							
Assessment Details² Please include the following: <ul style="list-style-type: none"> • Assessment Component • Assessment description • Learning Outcome(s) addressed • % of total • Assessment due date 	Assessment Component	Assessment Description	LO Addressed	% of total	Week due			
	Examination	3 hours examination	ALL	75%	N/a			
	Continuous Assessment	Energy Storage Project	LO4-6	25%	12			
Reassessment Requirements	100% Examination (3 hours), weighted at 50% to pass.							
Contact Hours and Indicative Student Workload²	<table border="1"> <tr> <td>Contact hours: 30 hours</td> </tr> <tr> <td>Independent Study (preparation for course and review of materials): 20 hours</td> </tr> <tr> <td>Independent Study (preparation for assessment, incl. completion of assessment): 75 hours</td> </tr> </table>					Contact hours: 30 hours	Independent Study (preparation for course and review of materials): 20 hours	Independent Study (preparation for assessment, incl. completion of assessment): 75 hours
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Recommended Reading List	Sustainable energy systems engineering; P Gevorkian (2007) Storing Energy - with Special Reference to Renewable Energy Sources; Trevor Letcher (2022)							
Module Pre-requisite	None							
Module Co-requisite	None							
Module Website	https://www.tcd.ie/courses/postgraduate/az/course.php?id=DPTEG-ENSE-1F09							
Are other Schools/Departments involved in the delivery of this module? If yes, please provide details.	No							
Module Approval Date								

Approved by

Academic Start Year

11th September 2023

Academic Year of Date

2023/2024