Sustainability Engineering Leadership, MS (Boston)

The Master of Science in Sustainability Engineering Leadership is designed to train future leaders in the design and engineering of products, processes, and systems that address pressing environmental challenges. Students build core skills in engineering management and leadership while pursuing advanced training in one of two sustainable engineering tracks: sustainability assessment or energy and climate technologies. All students complete a comprehensive capstone project as part of the degree. The Master of Science in Sustainability Engineering Leadership is a double-degree program with University College Dublin. As a double-degree program, students complete their first year at Northeastern University—with 20 total semester hours and a potential four-month co-op or research experience—and take their remaining credits in the second year with University College Dublin.

Program Requirements

Complete all courses and requirements listed below unless otherwise indicated.

Core Requirements

Code	Title	Hours
EMGT 5220	Engineering Project Management [1]	4
ENLR 5121	Engineering Leadership 1	2
ENLR 5122	Engineering Leadership 2	2

Master's Thesis or Challenge Projects

Code	Title	Hours
Complete one of the following sequences: [2]		8
CIVE 7945 and CIVE 7990	Master's Project and Thesis	
ENLR 7440 and ENLR 7442	Engineering Leadership Challenge Project 1 and Engineering Leadership Challenge Project 2	

Concentrations

Complete one of the following options:

- Energy and Climate Technologies (p. 1)
- Sustainability Assessment (p. 2)

ENERGY AND CLIMATE TECHNOLOGIES CONCENTRATION

Code	Title	Hours
Complete 20 semester hours from the following: [3]		20
CHME 6410	Chemical Engineering Research Methods	
CHME 6420	Engineering for Chemical Sustainability	
CIVE 5363	Climate Science, Engineering Adaptation, and Policy	
CIVE 5365	Climate Technologies for Decarbonization, Mitigation, and Adaptation	
EECE 5670	Sustainable Energy: Materials, Conversion, Storage, and Usage	
ENSY 5000	Fundamentals of Energy System Integration	
ENSY 5100	Hydropower	
ENSY 5200	Energy Storage Systems	
ENSY 5300	Electrochemical Energy Storage	
ENSY 5500	Smart Grid	
ENSY 5585	Wind Energy Systems	
ENSY 5650	Geologic Energy Systems for Energy Generation and Carbon Sequestration	
ENSY 5700	Renewable Energy Development	
ENVR 5350	Sustainable Energy and Climate Solutions	
ENVR 5800	Climate Adaptation and Nature-Based Solutions	
MATL 6270	Principles, Devices, and Materials for Energy Storage and Energy Harvesting	
ME 5685	Solar Thermal Engineering	

SUSTAINABILITY ASSESSMENT CONCENTRATION

Code	Title	Hours
Complete 20 semester hours from the following: [4]		20
CIVE 5255	Tools and Techniques of Environmental Health	
CIVE 5261	Dynamic Modeling for Environmental Investment and Policymaking	
CIVE 5275	Life Cycle Assessment of Materials, Products, and Infrastructure	
CIVE 5699	Special Topics in Civil Engineering (Equity in Civil and Environmental Engineering)	
CIVE 7110	Critical Infrastructure Resilience	
CIVE 7150	Data-Driven Decision Support for Civil and Environmental Engineering	
SBSY 5100	Sustainable Design and Technologies in Construction	

1 The following UCD course will also fulfill this requirement: MEEN40800.
2 The following UCD courses must be used to fulfill this requirement: BSEN40550 and BSEN40570.
3 The following UCD courses will also fulfill this requirement: BSEN30310, BSEN30560, BSEN40320, BSEN40350, BSEN40560, and BSEN40700.
4 The following UCD courses will also fulfill this requirement: BSEN30060, BSEN30360, BSEN40400, BSEN40750, and BSEN40810.

Program Credit/GPA Requirements

36 total semester hours required
Minimum 3.000 GPA required