University of the Built Environment
EST. 1919

Patron: His Majesty King Charles III

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Independent Research Project

Module Descriptor

Module Code:	REN7PRO
Version:	V1.00
Status:	Final
Date:	05/11/2025

Summary Module Details

Module details

Module Title: Independent Research Project

Module Leader: Dr Mahmoud Dhimish (each student would have their own supervisor)

Module Mode: Supported online learning

Semester: Autumn (UK) and Spring (UK)

Level: 7

Credits: 60

Learning Hours: 600

Contact & Study Hours

Directed Study Time: 96 hrs (16%)

Self-directed Study Time: 504 hrs (84%)

Assessment Type

Self-directed Research Project: 100%

Module Summary

This module focusses upon students developing an academically robust dissertation. It will draw upon the academic body of knowledge, theories, frameworks and include academic research publications around a specific topic. A theoretical position and methodological choices will be discussed, and a research design developed, thus ensuring rigour at the highest level possible for an MSc. The dissertation might include primary or secondary data and analysis related to renewable energy, AI, or combination of both.

Taken on which Programmes

MSc Renewable Energy and AI (C)

Core (C) or Elective (E)

Module Aims

This module aims to provide students the opportunity to build upon research skills and knowledge from the programme. This involves undertaking a rigorous piece of engineering and AI research whilst developing the necessary understanding, knowledge and skills to produce a dissertation including all parts of a research project.

Students are provided with academic supervision to support their dissertation research and writing on a topic of their choice.

Module Learning Outcomes

LO1. Critically review and synthesise relevant literature to identify a research gap and formulate a clear research problem within the context of sustainability.

LO2. Analyse data from a research design associated with sustainability within the context of the renewable energy engineering, artificial intelligence, and beyond.

LO3. Evaluate the impact of the research findings for the renewable energy engineering or/and AI literature, thus make a contribution.

LO4. Transferable skills – critique published reports/research, construct a convincing argument drawing upon that critique, self-reflection and research project management.

LO5. Demonstrate the craft of engineering or/and AI research through the delivery of a dissertation.

Indicative Module Content

Module topics

- Supervisory guidance around literature critique.
- Supervisory guidance around ontology, epistemology and methodology.
- Supervisory guidance around research object, unit of analysis and level of understanding.
- Supervisory guidance around rigour and appropriate claims.
- Supervisory guidance around the topic area to be studied.

This content will be reviewed and updated regularly to reflect the legal, moral and financial changes in professional standards and practice, and the evolving body of knowledge regarding social science research.

Overview of Summative Assessment

Module learning outcomes	Assessment	Word count or equivalent	Weighting
LO1, LO2, LO3, LO4, LO5	Research Dissertation	10,000	80%
LO3, LO4, LO5	Research Project Presentation	10-minute presentation followed by 20–30 minutes Q&A	20%

Module Pass Mark (as a weighted average of all assessments): 50%

Key Module Learning Resources

Supervision and Monitoring

- Weekly Meetings: Each student meets weekly with their supervisor to discuss progress, review objectives, and refine methodology.
- Monitoring Checklist: A structured checklist is completed at each stage (proposal approval, data readiness, analysis phase, draft submission).
- Oversight: Supervisors' progress reports are periodically reviewed by the Module Leader and Programme Leader to ensure academic rigour and compliance.
- Support: Students have access to virtual research clinics, formative feedback sessions, and dedicated VLE resources on research methods and data ethics.
- Any resubmission will follow the University's standard regulations for reassessment and submission timelines.

Integration and Research Skills Mapping

Research and data competencies are progressively developed across the MSc and consolidated in this module.

Preceding Module Code	Key Skills Feeding into REN7PRO
REN7ESP	Energy system data analysis, performance modelling, literature review.
REN7DAE	Data preprocessing, AI model application, ethical data management.
REN7CER	Evaluation of empirical/simulated data, multi-system integration.
REN7AID	Forecasting, optimisation, and scenario-based decision-making.
REN7STR	Systems mapping and methodological frameworks.
REN7ERS	Risk, reliability, and lifecycle analysis; quantitative reasoning.

Core Sources and Texts

The core reading resources within each module will be provided via the specific Virtual Learning Environment (VLE) module pages and within the e-Library. Additional reference material and supplementary resources to support your studies are available through the University e-Library.

Module tools

Students will have access to study materials, dedicated academic support, student forums, and learning activities via an online learning platform (VLE).

The module page on the VLE is broken down into structured study weeks to help students plan their time, with each week containing a mixture of reading, case studies, videos/recordings and interactive activities to go through. Online webinars/seminars led by the Module Leader can be attended in real time and provide opportunities to consolidate knowledge, ask questions, discuss topics and work through learning activities together. These sessions are recorded to support students who cannot attend and to enable students to recap the session and work through it at their own pace. Module forums on the VLE provide further opportunities to discuss topics with other students, complete collaborative work and get extra help from the module team.

Professional online resources

The e-Library provides access to trusted, quality online resources, selected by subject specialists, to support students' study. This includes journals, industry publications, magazines, academic books and a dissertation/work-based library. For a list of the key industry specific and education resources available please visit the VLE e-Library.

Other relevant resources

Access is also provided to further information sources that include the British Library and Open University UK catalogues, as well as providing a monthly current awareness service entitled, ***Knowledge Foundations*** - a compendium of news, research and resources relating to the educational sector and the Built Environment.

The module resource list is available on the module VLE page and is updated regularly to ensure materials are relevant and current.