New Programme Validation External Review Panel Report

Programme Reference Number:	S013
Faculty/School(s):	Faculty of Computing and Engineering + Faculty Science and Health
Department(s):	Department of Electronic and Mechanical Engineering + Department of Life and Physical Sciences
Type of Review:	SPA - Microcredentials

Details of Programme(s) Reviewed:

Title:	Award Type:	NFQ Level:	ECTS:	Duration:	Delivery Mode:	Proposed Student Intake:	Proposed Start Date:
Power Systems Dynamics and Control	SPA	9	5	12 weeks	Blended	16-32	Jan '25
Fundamentals of Modern Energy Storage Solutions	SPA	9	5	12 weeks	Blended	16-32	Jan '25
Decarbonising Energy Production	SPA	9	5	12 weeks	Blended	16-32	Jan '25

Date of Review:	20th Dec. 2024

Review Panel

Panellist Role	Title	Name	Organisation	Job Title
Chair	Dr	Trevor McSharry	ATU Sligo	Head of Faculty of Engineering and Design
External Academic Discipline Expert	Dr	Nigel McKelvey	ATU Donegal	Head of Department
Industry/ Community Representative	Dr	Fiona Gilchrest	Jaguar Land Rover	R&D Site Engagement Lead
Student Representative	Mr	Agni Paul	ATU Donegal	PhD Researcher, Department of Computing,
Vice President for Academic Affairs and Registrar (VPAAR) Nominee (Academic Secretary)	Ms	Carmel Brennan	ATU Galway	Assistant Registrar

All external members of the panel have declared that they are independent of ATU (Atlantic Technological University), and all have declared that they have no conflict of interest.

Programme Design Team

The panel met the staff listed below during the review process.

Dr Joanne Gallagher	Dr Kim McFadden
Emmett Kerr	Dr Christopher McEleney
Dr Sara Sajid	

Introduction

Power Systems Dynamics and Control

This module introduces the learner to the dynamic behaviours and control mechanisms essential for power system networks. The course material is a mix of electrical engineering, system dynamics, and sustainable energy management. Students will examine the principles of synchronous machine dynamics, transformer control, and power electronics. The course covers the industry norms used for control strategies for various components, including synchronous machines, transformers, and induction machines, appreciating their dynamic and practical applications. A particular emphasis is given to the role of Flexible AC Transmission Systems (FACTS) and Voltage Source Converters (VSC) in modern power grids. This module will also encourage students to explore the technical and ethical implications of advanced control techniques in power systems, considering their broader impact on grid stability and renewable energy integration.

Fundamentals of Modern Energy Storage Solutions

This module provides an in-depth exploration of the modern methods used for energy storage, including mechanical, electrochemical, thermal, chemical, electromagnetic, gravitational, and kinetic energy storage solutions. Students will gain a comprehensive understanding of the principles, advantages, limitations, and applications of each storage technique. Practical applications and real-world scenarios will be highlighted, ensuring students can make informed decisions on energy storage solutions in various contexts.

Decarbonising Energy Production

This module explores the evolutionary trajectory of energy production, emphasising the shift towards environmentally sustainable practices. Students will be introduced to the principles behind transformative energy solutions, gaining a deeper understanding of the various global methodologies to reduce carbon footprints. The module's combined mathematical and socio-economical approach ensures learners are aware of both the technological advancements and the socio-economic requirements for a decarbonised future. There will also be an emphasis on practical measurements of current fuels used for energy production and storage, reinforcing the real-world impacts of transitioning to greener energy sources.

Rationale for Programme(s)

Green Tech Skillnet invited suitable institutes to tender for the delivery of this module on eTenders in April of this year to address skill and knowledge shortages in the renewable energy sector. ATU Donegal was successful and was awarded the contract.

Validation Criteria

ATU's Developing and Validating New Taught Programmes Policy specifies that new programmes must comply with the following criteria for validation:

1. The programme aims and learning outcomes are clear and aligned with the proposed award title.
2. The rationale for the programme is well informed and justified.
3. The design of the programme is suitably structured and fit for purpose.
4. The design of the programme ensures that students can successfully achieve the Programme Learning Outcomes.
5. The teaching, learning and assessment strategy is well planned and appropriate for the discipline area and type of award.
6. Assessment techniques are fair, valid, reliable, consistent and a credible measure of the academic standard attained by students.
7. The planned resources, including staff, physical, online, library and student supports, sufficiently support the teaching, learning and assessment strategy for the programme.
8. The programme facilitates lifelong learning for a diverse student population by setting out appropriate entry requirements and opportunities for access, transfer, and progression.
9. There is demand for potential graduates from the programme.
10. The learning environment and mode of delivery are consistent with the needs of the intended students of the programme and accessible and appropriate support services for students have been provided for.
11. Students will be well informed on the requirements of the programme, guided to relevant resources and supported in their studies in a caring environment.

Findings

Overall Finding

Validated without changes	
Validated subject to condition(s) and/or recommendation(s)	**X**
Rejected	

Reason for Overall Finding

The programmes subject to the condition(s) and/or recommendation(s) below meets the validation criteria as stipulated.

Commendations

The Validation Panel advises Academic Council of the following commendations.

1. The collaboration across departments and campuses is welcomed by the panel.
2. The proposers have developed awards in an important and topical discipline area in collaboration with Skillnet.
3. The proposed programmes meet an identified skill need and will enhance the knowledge and skills of graduates.
4. Modules are generally well articulated and presented.

Conditions

The Validation Panel advises Academic Council that subject to satisfying any condition(s) detailed below, the panel is satisfied that the proposed programme(s) meets the validation criteria as set out in Atlantic Technological University's Developing and Validating New Programmes Policy.

1. Review the proposed assessment strategy for each of the modules to reduce the weighting of MCQs, which may be more appropriately used for formative or low-stakes assessment. If using MCQs outline the mechanisms that will be used to ensure the validity and reliability of MCQ assessments. Consider whether consolidating MCQ assessments is feasible and they could be run in parallel with practical sessions. Consider whether an applied assignment may be a suitable means to assess the module, with verification interviews if required. Review the proposal for an alternative assessment option. If this is to be used it should provide an alternative assessment method and not disadvantage any cohort.

Recommendations

The panel advises Academic Council that the Programme Development Team and/or the Department should take cognisance of any recommendations outlined below.

1. Clarify the approach that will be taken to artificial intelligence in these programmes and how this will be communicated to students.
2. Review the contact time and breakdown of delivery for the modules to ensure it is appropriate for level 9 and ensures the feasibility of programmes.
3. Record the duration of the modules as a semester to ensure that the module can be incorporated into other programmes in the future.
4. Power System Dynamics and Control: Review the module learning outcomes to ensure that they are written appropriately for a level 9 module in all instances.
5. Ensure that there is clarity in promotion of the eligibility requirements for applicants when the programme is being offered through Skillnet.

Report Approval

This report has been agreed by the review panel and is signed on their behalf by the chairperson.

Signed:  Name: Dr Trevor McSharry Validation Panel Chair	Date: 20th December 2024