



**TUS**

**Technological University of the Shannon:  
Midlands Midwest**

Ollscoil Teicneolaíochta na Sionainne:  
Lár Tíre Iarthar Láir

**[www.tus.ie](http://www.tus.ie)**

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Dámh na hInnealtóireachta agus na Timpeallachta  
Tógtha  
Faculty of Engineering and the Built Environment

## **Report of Peer Review Panel**

### **Programmatic Review**

**of the**

### **Department of Electrical and Electronic Engineering**

## 1. INTRODUCTION

This report outlines, in summary form, the proceedings of the External Panel virtual visit to TUS for the Programmatic Review of the Department of Electrical and Electronic Engineering, and the findings and conclusions of the External Panel. The Programmatic Review visit was undertaken in accordance, insofar as was possible, with Section 3 of the LIT document 'Academic Council Regulations and Procedures for Taught Programmes (ACRP): Academic Year 2021/2022' (Para.3.3.1 refers). The ACRP is published on the TUS website. An external Panel makes an impartial judgement on the Critical Self Study and programme changes proposed within the Programmatic Review.

It was noted that LIT has been designated as a constituent institution of The Technological University of the Shannon (TUS). The panel congratulates Management on this development and wishes the new University all that is good for the future. s

## 2. GENERAL INFORMATION

### 2.1 Higher Education Provider

Institute: TUS: Midlands Midwest  
Faculty/School: Faculty of Engineering and the Built Environment  
Department: Department of Electrical and Electronic Engineering  
Date of Visit: 30<sup>th</sup> March 2022

### 2.2 Programmes Evaluated

Department of Electrical and Electronic Engineering

### 2.3 External Programmatic Review Panel of Expert Assessors

Mr Tony Quinlan - (Chairperson)  
Dr Michael Conlon – TU Dublin  
Dr Johannes Steinschaden - FH Voralberg  
Mr Des O'Reilly - GMIT  
Mr Ronan Dillon - Microchip  
Mr Luke Deasy - Enerpower  
Mr Martin Carroll – European Spallation Source ERIC  
Mr Maurice Gough – Industry Representative  
Ms Katie O'Keeffe - Student Representative

### 2.4 Institute Staff

Dr Terry Twomey, Vice President Academic Affairs & Registrar  
Dr Maria Kyne, Dean of Faculty of Engineering and the Built Environment  
Mr Tony Mahon, Head of Department of Electrical and Electronic Engineering

*Department of Electrical and Electronic Engineering – Lecturing Staff*

## 2.5 Selected Stakeholders

### 2.5.1 Employers/Industry & Alumni Representatives

Des Minihan - Analog Devices  
Cormac Cummins - EI Electronics  
Keith Mooney - Beckton Dickinson  
Kevin O'Brien - Beckton Dickinson  
William Collopy - Alumni  
Dominic Sloan - Alumni

### 2.5.2 Current Students

Jessica Winters (Automation)  
Sam Costello (Automation)  
Luke Short (Renewables)  
Shane Ward (Renewables)  
Denis Hardi (Renewables)  
Dara George (Electronics)  
Sebastian Wolanin (Electronics)  
Ross McNamara (Electrical)  
John O'Dwyer (Electrical)

## 2.6 Documentation

2.6.1 Department of Electrical and Electronic Engineering, Programmatic Review document

2.6.2 Critical Self-Study, Faculty of Engineering and Technology

2.6.3 Lifelong Learning Programme Documents

2.6.4 Programme Documents:

Bachelor of Engineering (Honours) in Electrical Engineering

Bachelor of Engineering in Electrical Engineering

Higher Certificate in Electrical Engineering

Bachelor of Engineering in Industrial Electrical Engineering (Apprenticeship)

Bachelor of Engineering (Honours) in Renewable and Electrical Energy Engineering

Bachelor of Engineering in Renewable and Electrical Energy Engineering

Higher Certificate in Renewable and Electrical Energy Engineering

MSc in Sustainable Energy Engineering Systems Management

Bachelor of Engineering in Electrical Technology (Flexible Learning)

Bachelor of Engineering (Honours) in Industrial Automation and Robotic Systems

Bachelor of Engineering in Industrial Automation and Robotic Systems

Higher Certificate in Industrial Automation and Robotic Systems

Bachelor of Engineering (Honours) in Electronic Engineering with Computer Systems

Bachelor of Engineering in Electronic Engineering with Computer Systems  
Higher Certificate in Electronic Engineering with Computer Systems

Bachelor of Engineering in Manufacturing Technology (Flexible Learning)

Bachelor of Engineering in Manufacturing Data Integration Engineering  
(Apprenticeship)

Flexible Learning Programmes

(SPA in Smart Factory Technology)

(SPA in Digital Factory Technology)

(SPA in Smart Factory Operations)

### 3.0 FINDINGS AND RECOMMENDATIONS OF EXTERNAL PROGRAMMATIC REVIEW PANEL

#### 3.1 Main Findings

The External Validation Panel of Assessors recommends reapproval of the following programmes and associated amendments in the Department of Electrical and Electronic Engineering.

Bachelor of Engineering (Honours) in Electrical Engineering

Bachelor of Engineering in Electrical Engineering

Higher Certificate in Electrical Engineering

Bachelor of Engineering in Industrial Electrical Engineering (Apprenticeship)

Bachelor of Engineering (Honours) in Renewable and Electrical Energy Engineering

Bachelor of Engineering in Renewable and Electrical Energy Engineering

Higher Certificate in Renewable and Electrical Energy Engineering

MSc in Sustainable Energy Engineering Systems Management

Bachelor of Engineering in Electrical Technology (Flexible Learning)

Bachelor of Engineering (Honours) in Industrial Automation and Robotic Systems

Bachelor of Engineering in Industrial Automation and Robotic Systems

Higher Certificate in Industrial Automation and Robotic Systems

Bachelor of Engineering (Honours) in Electronic Engineering with Computer Systems

Bachelor of Engineering in Electronic Engineering with Computer Systems

Higher Certificate in Electronic Engineering with Computer Systems

Bachelor of Engineering in Manufacturing Technology (Flexible Learning)

Bachelor of Engineering in Manufacturing Data Integration Engineering (Apprenticeship)

#### Flexible Learning Programmes

(SPA in Smart Factory Technology)

(SPA in Digital Factory Technology)

(SPA in Smart Factory Operations)

subject to the following conditions and recommendations.

## 3.2 CONDITIONS

No conditions apply

## 3.3 RECOMMENDATIONS

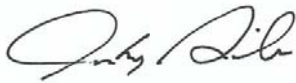
### General

- 3.3.1 The Panel noted that the conduct of the review was not fully in accordance with “Academic Council Regulations and Procedures for Taught Programmes (ACRP): Academic Year 2021/22”. This issue was satisfactorily dealt with during the initial meeting with Management. However, the Panel notes that it was not possible to discharge all the designated functions of the Review within the shortened timeframe available. It was also noted that the amended process available for this “visit” is a temporary measure necessitated by the Covid pandemic. The Panel strongly recommends that Academic Council reflect on the impact of this truncated approach on the quality/content of the Review and take such ensuing action as it might consider necessary.
- 3.3.2 Continue to invest in facilities to provide more specialised and purpose-built laboratory spaces. The assignment of a dedicated lab space for students to use during gaps in their timetables during the week to work on projects would be hugely beneficial.
- 3.3.3 Consider how learnings and positive aspects of the experience from the Covid-19 period in teaching, learning and assessment can be mainstreamed in the post pandemic context.
- 3.3.4 Investigate the possibility of incorporating semesterisation throughout 3<sup>rd</sup> year rather than the 20-week semester going forward.
- 3.3.5 Ensure that course documentation is continuously reviewed and updated as appropriate. to reflect regulatory changes. Some examples that were noted are;
- 3.3.5.1 Update the reference to the Statutory regulations throughout the documentation to reflect the changes to ET101 Electrical Rules- This was changed in 2020 to NSAI IS10101 and UK Wiring Regs updated to 18th Edition from 17th Edition.
  - 3.3.5.2 Update reference to Microgen rules, they changed on 31st Jan, note this in documentation, along with recent January 2022 ESB rule changes and Eir-Grid controllability regulation changes.

- 3.3.6 Review and consider opportunities for students to complete a longer duration of work placement from January to August. This creates opportunities for a more comprehensive work placement and would allow students to participate in Erasmus and study abroad opportunities. The current placement period from March to August restricts this.
- 3.3.7 Ensure that a student's work placement aligns to relevant coursework insofar as is possible, ensure placement is structured and that mentorship is in place.
- 3.3.8 Within the Electrical Technology Flexible programme documentation, highlight further, that graduates can also progress to the Electrical Engineering Level 8 programme.
- 3.3.9 Consider integrating reliability analysis and data centre maintenance into the programme where appropriate (including vibration analysis). Explore the opportunity to include it as part of the Advanced PLC's in Year 3 BEng (Hons) in Industrial Automation and Robotic Systems.
- 3.3.10 Include relevant content on the topics of Control Networks Systems into the BEng (Hons) in Industrial Automation and Robotic Systems.
- 3.3.11 Consider commencing the 4<sup>th</sup> Year Final Year Project (FYP) earlier in semester 1 to allow students to begin work on their FYP, and also have supervisors assigned earlier. Ensure that supervisors are assigned earlier in the process to allow enough time for students to complete the FYP.
- 3.3.12 Consider the provision of a dedicated room for students working on their FYP.
- 3.3.13 Consider providing students with a combined assessment matrix at the start of the semester to help students manage their CA and allow them to see when all assignments are due. Students should have a very clear view of their assessment load
- 3.3.14 Consider reducing the number of programming languages being taught to students to allow for more proficiency and time on a selected programming language.
- 3.3.15 Ensure students have the skills to adapt and integrate with programme teams. Ideally, graduates need to be inquisitive and have a mix of skills. Students need good communication and presentation skills to present on their work and collaborate as part of a team.
- 3.3.16 Consider including content on communication skills in all programmes.
- 3.3.17 Consider issuing the previous Programmatic Review Report, as a separate document, to the Programme Panel.

### 3.4 Commendations and Observations

- 3.4.1 The Panel commends the M.Sc. in Sustainable Energy Engineering Systems Management programme as a very interesting and innovative programme.
- 3.4.2 The Panel commends the Department on its presentation as a coherent team and thanked the staff.
- 3.4.3 The Panel commends the programme teams on the quality of the programme documentation which has been developed to a high standard.
- 3.4.4 The Panel notes and commends the quality and quantity of the work conducted by the Department staff in preparing for the Programmatic Review and notes the extensive stakeholder consultation in particular. The presentation of the individual programmes during the meetings was particularly effective
- 3.4.5 The Panel would like to thank and commend the staff from the Registrar's office and the Faculty team who were supporting the Panel on the administrative side.
- 3.4.6 The Panel specifically commends the department on the range of programmes available, both in terms of content and flexibility with good programme options available to cater for all entry level students and with clear advancement pathways.



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Signature of Chairperson

Date: 7/4/22