



**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 hEolaíochta Feidhmí agus na Teicneolaíochta**

**Faculty of Applied Science and Technology**

**Roinn Teicneolaíochta Faisnéise**

**Department of Mechanical and Automobile Engineering**

**Report of External Validation Panel**

**External Validation Panel, 02/05/2025**

**for the**

**MASTER OF ENGINEERING IN MECHANICAL ENGINEERING**

Post Graduate Diploma in Engineering in Mechanical Engineering (Full time)

Post Graduate Diploma in Engineering in Mechanical Engineering (Online)

Special Purpose Award in Data Analytics and Prediction Modelling

Special Purpose Award in Digitization and Automation Management

Special Purpose Award in Finite Element Analysis with Engineering Design

Special Purpose Award in Computational Fluid Dynamics with Engineering Design

Special Purpose Award in Sustainable Product and Process Development

Special Purpose Award in Advanced Materials with Thermofluids

## 1.0 INTRODUCTION

This report outlines, in summary form, the proceedings and findings of the external validation visit for the proposed programmes and SPA's, held on 10<sup>th</sup> April 2025. The external validation visit was undertaken in accordance with TUS Academic Regulations for the development of taught programmes. An external validation panel makes an independent impartial judgement on a programme proposal.

## 2.0 GENERAL INFORMATION

### 2.1 Higher Education Provider

Provider	TUS: Midlands Midwest
Faculty	Applied Sciences and Technology
Department	Mechanical and Automobile Engineering
Date of Panel	2 May 2025

### 2.2 Programme Evaluated

Award Title	Master of Engineering
Programme Title	Master of Engineering in Mechanical Engineering
NFQ Level	9
ECTS Credits	90
Award Class	Level 9
Delivery Mode	Full-time
Duration	1 year
Proposed Starting Date	September 2025
Contact	Dr Daniela Butan/Dr Lisa Henihan

Award Title	Post Graduate Diploma in Engineering
Programme Title	Post Graduate Diploma in Engineering (Full time)
NFQ Level	9
ECTS Credits	60
Award Class	Level 9
Delivery Mode	Full-time
Duration	1 year
Proposed Starting Date	September 2025
Contact	Dr Daniela Butan/Dr Lisa Henihan

Award Title	Post Graduate Diploma in Engineering
Programme Title	Post Graduate Diploma in Engineering in Mechanical Engineering (Online)
NFQ Level	9
ECTS Credits	60
Award Class	Level 9
Delivery Mode	Full-time
Duration	2 years
Proposed Starting Date	September 2025
Contact	Dr Daniela Butan/Dr Lisa Henihan

### 2.3 External Validation Panel of Expert Assessors

Name	Affiliation
Mr. John Vickery - Chairperson	IT Tallaght
Dr. David Tanner	UL
Dr. James Byrne	DCU
Mr. Michael Morgan	Cafco Vehicle

Mr Sean Campbell	Intel Ireland
Mr Thomas Brazill	Student Representative

Secretary to Panel: Dr. Sarah O'Toole, Tertiary Education Manager, TUS.  
Support to Secretary/Panel: Ms. Claire Frawley, Quality Officer, TUS

## 2.4 TU Staff

<b>Name</b>	<b>Affiliation</b>
Dr. Maria Kyne	Dean of Faculty of Engineering and the Built Environment
Mr Tony Mahon	Head of Department of Mechanical and Automobile Engineering
Programme Leaders: Dr Daniela Butan/Dr Lisa Henihan Programme Team: Bosco Clarke, Colm Crow, Sean Cunningham, Orlagh Doyle, Amit Haldar, Jennifer Hennessy, Emma Kelly, Philip Moloney, Clodagh Moore, Ciaran O'Loughlin, Patrick Walsh,	

### **3.0 FINDINGS AND RECOMMENDATIONS OF EXTERNAL VALIDATION PANEL**

#### **3.1 Main Findings**

The External Validation Panel of Assessors recommends approval of the proposed

#### **MASTER OF ENGINEERING IN MECHANICAL ENGINEERING**

Post Graduate Diploma in Engineering in Mechanical Engineering (Full time)

Post Graduate Diploma in Engineering in Mechanical Engineering (Online)

- Special Purpose Award in Data Analytics and Prediction Modelling and Digitization and Automation Management
- Special Purpose Award in Finite Element Analysis with Engineering Design and Computational Fluid Dynamics with Engineering Design
- Special Purpose Award in Sustainable Product and Process Development and Advanced Materials with Thermofluids
- Special Purpose Award in Data Analytics and Prediction Modelling
- Special Purpose Award in Digitization and Automation Management
- Special Purpose Award in Finite Element Analysis with Engineering Design
- Special Purpose Award in Computational Fluid Dynamics with Engineering Design
- Special Purpose Award in Sustainable Product and Process Development
- Special Purpose Award in Advanced Materials with Thermofluids

#### **3.2 Conditions**

- 1) Amend the documentation to ensure that there is consistency across the different sections and ensure coherence throughout. Remove statements in the documentation that are factually incorrect, i.e reference to approval from Engineers Ireland.

#### **3.3 Recommendations**

- 1) Entry Requirements:
  - a. remove statement in relation to Advanced Entry onto the programme.

- b. State in the documentation including Module Builder that students who do not receive a 2.2 or above at Level 8 require a minimum of 60% in the Postgraduate Diploma to progress to the Masters Degree.
- 2) Ensure the weekly and overall time commitment and workload is clearly communicated for students completing the programme.
  - 3) Review the module documentation and indicative syllabus to ensure there is adequate reference to Sustainability and Ethics throughout each module.
  - 4) Update the teaching and learning strategy sections within the modules to be more specific to each module and to incorporate formative feedback.
  - 5) Update the assessment strategies sections within the modules.
  - 6) Each module to state clearly the repeat assessment requirements.
  - 7) Consider how the modules link together and complement one another and the potential opportunities for cross module assessment, in line with the spiral learning model.
  - 8) Develop an assessment schedule to ensure the workload is evenly spread out and students are aware of assessment deadlines.
  - 9) Update the reading material throughout to ensure the most relevant and recent version is included
  - 10) Consider including directed learning into the programme schedule.
  - 11) Establish an industry advisory committee/board to provide ongoing industry feedback on the programme.

### **Online Delivery**

- 12) Consider how best to incorporate the laboratory based elements of the programme into the online delivery to ensure a consistent approach with the face to face delivery.
- 13) Update the module descriptors and assessment strategies for online modules to ensure they are authentically assessed.

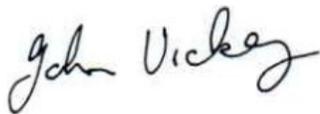
### **Modules**

- **Sustainable Product and Process Development (10 ECTS)**
  - Consider the industry standards to ensure suitable frameworks and industry standards are referenced in the indicative syllabus.
- **Data Analytics and Prediction Modelling (10 ECTS)**
  - Update the assessments in this module, and the reference to the in class written report

- **Finite Element Analysis with Engineering Design (10 ECTS)**
  - Review the Indicative Syllabus to ensure the breadth and depth is balanced within the module.
  - Consider how this module will be assessed for online delivery
- **Advanced Materials with Thermofluids (10 ECTS)**
  - Review the content of the module as there is a lot of material to be covered.
  - Consider moving the Thermofluids content to the CFD with Engineering Design module if appropriate.
- **Digitization and Automation Management (10 ECTS)**
  - Consider referencing EI Code of Ethics.
- **Computational Fluid Dynamics with Engineering Design (10 ECTS)**
  - Review the Indicative Syllabus to ensure the breadth and depth is balanced within the module.
- **Dissertation (Research project related to Industry) (30 ECTS)**
  - Document the actual delivery and schedule of assessments for students

### 3.4 Commendations and Observations

- 1) The panel commend the team for the comprehensive documentation and interesting, indicative syllabus.
- 2) The panel commend the different modes of programme delivery and embedded awards for the programme.
- 3) The panel commend the proposed links with industry in the programme
- 4) The panel commend the team for their active and enthusiastic engagement with the panel.
- 5) The panel noted that the embedded award/special purpose award material was sent the day previous to the panel.
- 6) The panel noted that the programme is already being advertised on the TUS website.




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Signature

Date 08/05/2025