



**TUS**

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

Ollscoil Teicneolaíochta na Sionainne:  
Lár Tíre Iarthar Láir

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**Dámh an Innealtóireacht agus an Timpeallacht Thógtha  
Faculty of Engineering and the Built Environment**

**Department of Mechanical and Automobile Engineering  
Report of External Validation Panel**

**External Validation Visit, 15th Sept 2023**

**for the**

**B.Eng. (Hons) in Engineering Technology Management**

**Embedded Awards**

**Bachelor of Engineering (Ordinary) in Engineering Technology Management**

**Higher Certificate in Engineering in Engineering Technology Management**

**Bachelor of Engineering (Hons) in Engineering Technology Management-**

**1 year add-on Level 8**

**Bachelor of Engineering in Engineering Technology Management-**

**1 year add-on Level 8**

## 1.0 INTRODUCTION

This report outlines in summary form, the proceedings and findings of the External Validation Panel visit for the proposed:

Bachelor of Engineering (Honours) in Engineering Technology Management

Embedded Awards:

- Bachelor of Engineering (Ordinary) in Engineering Technology Management
- Higher Certificate in Engineering in Engineering Technology Management

Bachelor of Engineering (Honours) in Engineering Technology Management Level 8-add-on

Embedded Awards:

- Higher Certificate in Engineering Technology Management
- Bachelor of Engineering (Hons) in Engineering Technology Management Level 8 1-year Add-on;
- Bachelor of Engineering. in Engineering Technology Management Level 7 1-year Add-on.

held on the 15<sup>th</sup> September 2023. 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	Technological University of the Shannon: Midlands Midwest
Faculty	Faculty of Engineering and the Built Environment
Department	Mechanical and Automobile Engineering
Date of Visit	15 <sup>th</sup> September 2023

### 2.2 Programmes Evaluated

Programme Title	Bachelor of Engineering (Hons) in Engineering Technology Management
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Award Title	Bachelor of Engineering (Hons) in Engineering Technology Management
NFQ Level	Level 8
ECTS Credits	240 ECTS
Award Class	Bachelor of Engineering (Honours)
Delivery Mode	Full Time
Duration	4 years
Proposed Starting Date	September 2024
Contact	Dr. Philip Ryan, Dr. Lisa Henihan, Mrs. Clodagh Moore

Programme Title	Bachelor of Engineering in Engineering Technology Management
Award Title	Bachelor of Engineering in Engineering Technology Management
NFQ Level	Level 7
ECTS Credits	180 ECTS
Award Class	Bachelor of Engineering (Ordinary)
Delivery Mode	Full Time
Duration	3 years
Proposed Starting Date	September 2024
Contact	Dr. Philip Ryan, Dr. Lisa Henihan, Mrs. Clodagh Moore

Programme Title	Higher Certificate in Engineering in Engineering Technology Management
Award Title	Bachelor of Engineering in Engineering Technology Management

NFQ Level	Level 6
ECTS Credits	180 ECTS
Award Class	Higher Certificate
Delivery Mode	Full Time
Duration	2 years
Proposed Starting Date	September 2024
Contact	Dr. Philip Ryan, Dr. Lisa Henihan, Mrs. Clodagh Moore

Programme Title	Bachelor of Engineering (Hons) in Engineering Technology Management- add-on
Award Title	Bachelor of Engineering (Hons) in Engineering Technology Management
NFQ Level	Level 8 (Honours) add-on
ECTS Credits	60 ECTS
Award Class	Bachelor of Engineering (Honours)
Delivery Mode	Full Time
Duration	1 year
Proposed Starting Date	September 2024
Contact	Dr. Philip Ryan, Dr. Lisa Henihan, Mrs. Clodagh Moore

Programme Title	Bachelor of Engineering (Hons) in Engineering Technology Management- add-on
Award Title	Bachelor of Engineering in Engineering Technology Management
NFQ Level	Level 7 add-on
ECTS Credits	60 ECTS
Award Class	Bachelor of Engineering

Delivery Mode	Full Time
Duration	1 year
Proposed Starting Date	September 2024
Contact	Dr. Philip Ryan, Dr. Lisa Henihan, Mrs. Clodagh Moore

### 2.3 External Validation Panel of Expert Assessors

Name	Affiliation
Mr. John Vickery	Formerly IT Tallaght (Chairperson)
Dr. Ingrid Hunt	University of Limerick
Dr. Frances Hardiman	SETU
Mr. David Sheil	Aerogen Ltd
Mr Johnny Johnson	Stryker Orthopaedics
Mr. Jack Carrig	Student Representative

Secretary to Panel: Ms. Sarah O'Toole

### 2.4 TU STAFF

Name	Affiliation
Dr. Terry Twomey	VP Academic Affairs and Registrar
Dr. Maria Kyne	Dean of Faculty of Engineering and the Built Environment
Dr. Philip Ryan	Head of Department of Mechanical and Automobile Engineering
Dr. Lisa Henihan/Mrs. Clodagh Moore	Programme Coordinators
Programme Team: Daniela Butan; Colm Crowe; Sean Cunningham; Emma Kelly; Paddy Walsh; 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 programmes and associated embedded awards:

Bachelor of Engineering (Honours) in Engineering Technology Management

Embedded Awards:

- Bachelor of Engineering (Ordinary) in Engineering Technology Management
- Higher Certificate in Engineering in Engineering Technology Management

Bachelor of Engineering (Honours) in Engineering Technology Management Level 8-add-on

Embedded Awards:

- Higher Certificate in Engineering Technology Management

Also included in this suite are the following stand-alone Add-on programmes:

- Bachelor of Engineering (Hons) in Engineering Technology Management Level 8 1-year Add-on;
- Bachelor of Engineering. in Engineering Technology Management Level 7 1-year Add-on.

#### **3.2 Conditions**

- 1) Stream the programme under the three key themes of Engineering, Technology & Management and working with experts in each area (especially in Management/Business), thread the expertise from Year 1 to Year 4 to ensure, for example, students have the Technology expertise in 4th year and at Level 8 standard.
- 2) Update all modules and ensure of consistency across the programme. Consider a consistent assessment and repeat strategy, remove any reference to teaching & delivery not explicit to the module, site visits etc and have consistency in format across the modules, for example, syllabus content. Review and rephrase the module learning outcomes and update the assessments to ensure that each learning outcomes is assessed.
- 3) Include documentation for both the Higher Certificate and Ordinary Degree that shows the programme learning outcomes are mapped to the appropriate Award Standard. They can be included in an appendix.

### 3.3 Recommendations

- 1) Update the existing modules at the next programmatic review to reflect feedback from the panel or update under 'Annual Programme Review' to reflect the needs of this programme etc. For example, modules in Year 2 that are year- long but could be semesterised. Where the content that is too advanced or not suitable to this particular cohort in existing modules, update at the next programmatic review. For example
  - a. Mathematics & Statistics
  - b. Fluid & Mechanics
- 2) Update all modules to ensure a triangulation and linkage between learning outcomes, syllabus and assessment. In certain cases, the syllabus is covering content that is not in the learning outcomes or the syllabus has learning outcomes rather than content, some examples,
  - Example: Product Innovation & Process Design 2
  - Intro to Data Analysis
  - Innovation Business Management
- 3) Review and update the documentation to ensure references to blended and online delivery are clarified throughout the documentation.
- 4) Review all modules in the context of overlap and duplication of content. Although connectivity between modules is important, there is clear duplication of content, for example, leadership, quality, motors etc.
- 5) Consider how Universal Design for Learning (UDL) principles would be further incorporated into the modules in particular around assessment design and opportunities for multiple means of engagement and representation.
- 6) Consider how the topics of Big Data and AI can be further incorporated into the modules to ensure graduates from the programme will have the key skills required relevant for entering industry.
- 7) For the Management stream, liaise with Department of Business and Humanities to strengthen the Management expertise element of the programme. Consider interacting and using existing business modules and drive the interdisciplinary nature of the programme with expertise and insight in this area.
- 8) Increase engagement with second level students and career guidance counsellors to grow opportunities for programme demand.

- 9) Document the entry requirements for the advanced add-on programmes, including the Recognition of Prior Learning (RPL) requirements required.
- 10) Look at opportunity to reduce over-assessment and include an assessment table and schedule in the programme documentation.
- 11) Remove the reference to mandatory attendance in modules.
- 12) Re-visit the reading lists to ensure they are as current as possible.
- 13) Review the requirement in relation to the repeat mechanism across the modules to ensure there is consistency on the repeat process.
- 14) Remove the reference to Introduction in the title of modules where possible as this implies there is a follow-on advanced module. Review the terminology across modules to ensure consistency.

### ***Stage 1 Modules***

- 1) Consider replacing 'Electronic & Electrical Technology 1' with a suitable module with less/more suitable content as there is significant coverage of multiple disciplines – Electronic, Electrical, Industrial Electrical etc

### ***Stage 2 Modules***

- 1) Review the syllabus of Digital Acquisition as it is too advanced for Stage 1 and/or consider moving this to stage 3 or 4.
- 2) Review the syllabus of the Sustainable Business Management module to ensure it reflects the ethical practices.
- 3) Revise the syllabus in the module Product Innovation & Process Design 2 to avoid duplication with other modules, in particular, review the necessity for having 15% of this module related to TQM, which is already covered in the Quality Management module.
- 4) Review the syllabus of the Innovative Business Management module, to align more with the learning outcomes.

### ***Stage 3 Modules***

- 1) Consider using student presentations with the Engineering Work placement module to provide them with the opportunity to further develop their presentation skills. Also consider the use of Pass/Fail for this module.
- 2) Update the 'Process Management' and 'Engineering Operations Management' modules based on recent Academic Council Approval of 100% CA

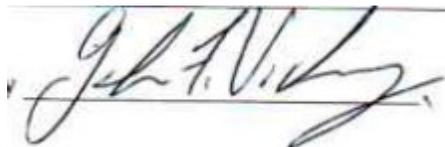
- 3) Consider adding a learning outcome to cover the research section of the syllabus for the module Applied Product and Process Design

#### **Stage 4 Modules**

- 1) Examine discrepancy in the assessment % for Process Improvement module.
- 2) Review the Engineering Project Management module to ensure that it is in line with the latest version of PMBOK (currently 7<sup>th</sup> edition). Include in the document that the module will be updated based on future updated editions of PMBOK. Consider including material on the competencies for the International Project Management Association (IPMA).
- 3) Review the statistical stream throughout the programme ensuring that it progresses from basic to an advanced level suitable for the programme.
- 4) Ensure the Dissertation reflects the true interdisciplinary nature of the Engineering Technology Management programme, and that it doesn't fall into a singular domain.

#### **3.4 Commendations and Observations**

- 1) The programme is a great opportunity to provide graduates with a unique combination of skills and broad range of knowledge in the areas of engineering, technology and business.
- 2) Providing students with the opportunity for PMI and Six Sigma certification.
- 3) The panel appreciated the detailed discussions and clarifications provided by the programme team.
- 4) The team commends the introduction of work placement in the programme and the suggested duration from May to January.
- 5) The panel would like to commend the team for their active and enthusiastic engagement with the panel.



Signature of Chairperson

Date: 27/09/2023