TUS

Technological University of the Shannon:
Midlands Midwest
Ollscoil Teicneolaíochta na Sionainne:
Lár Tíre Iarthar Láir

www.tus.ie

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 Mechanical and Automobile Engineering

Final Report

1.0 INTRODUCTION

This report outlines, in summary form, the proceedings of the External Panel visit to TUS for the Programmatic Review of the Department of Mechanical and Automobile Engineering, and the findings and conclusions of the External Panel. The Programmatic Review visit was undertaken in accordance with the Academic Council Regulation of the Technological University. An external Panel makes an impartial judgement on the Critical Self Study and programme changes proposed within the Programmatic Review.

2.0 GENERAL INFORMATION

2.1 Higher Education Provider

Institute:	Technological University of the Shannon: Midlands Midwest
Faculty/School:	Faculty of Engineering and the Built Environment
Department:	Mechanical and Automobile Engineering
Date of Visit:	28th April 2022

2.2 Programmes Evaluated

Programmes of the Department of Mechanical and Automobile Engineering as listed in Section 3.1

2.3 External Programmatic Review Panel of Expert Assessors

Mr. Brendan O'Donnell – MTU (Chairperson)
Dr. Edmond Tobin – IT Carlow
Mr. Barry Morton – LMC Group
Mr. Gerard Kennedy – Modular Global
Dr. Andrew Keppel – IT Carlow
Mr. Kieran Kelleher – Zimmer Biomet
Dr. David O'Gorman – GMIT
Mr. Brendan Condon – Industry Representative
Mr. Darren Robinson – Jaguar Landrover
Ms. Veronica Bolger – Law Debenture Corp PLC
Mr. Jonathan McGarry– Student Representative
Mr. Darragh McHugh – 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.
Dr. Phillip Ryan, Head of Department of Mechanical and Automobile Engineering.
Department of the Built Environment – Lecturing Staff.

2.5 Employers/Industry & Alumni Representatives

Michael Morgan, NVD Limited
David Doyle, TFM Limited
Shane Sheridan, Alumni
Colin Ruttle, Shortt Stainless
Jim Devaney, Rockwell
Robert Harrington, Rockwell
Mark Hall, Alumni
John Drysdale, IASC Aero
Gerry Reynolds, Takumi Precision

2.5 Current Students

Mark Clery
Nicola Ryan
Kevin Kuriyan
Shane Hynes
Alan King
Val Keating
Morgan Walsh

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 Mechanical and Automobile Engineering.

Bachelor of Engineering (Honours) in Mechanical Engineering (facilities)
Bachelor of Engineering (Honours) in Mechanical Engineering (One-year Add-On)
Bachelor of Engineering in Mechanical Engineering
Bachelor of Engineering in Mechanical Engineering (One-year Add-On)
Higher Certificate in Engineering in Mechanical Engineering

Bachelor of Engineering (Honours) in Precision Engineering (Ab Initio Level 8)
Bachelor of Engineering (Honours) in Precision Engineering (One-year Add-on)
Bachelor of Engineering in Precision Engineering (Ab Initio Level 7)
Bachelor of Engineering in Precision Engineering (One-year Add-on)
Higher Certificate in Engineering in Precision Engineering

Higher Certificate in Engineering in Precision Machinist and Quality Control (Apprenticeship) Mode 1
Higher Certificate in Engineering in Precision Machinist and Quality Control (Apprenticeship) Mode 2

Bachelor of Engineering (Honours) in Process and Engineering Management (One-year Add-on)

Master of Science in Process Validation and Regulatory Affairs
Graduate Diploma in Science in Process Validation and Regulatory Affairs (Medical).
Graduate Diploma in Science in Process Validation and Regulatory Affairs (Pharmaceutical).
Graduate Diploma in Science in Process Validation and Regulatory Affairs (Food and Drink)

Special Purpose Awards

Certificate in Quality Management.
Certificate in Award in Process Validation.
Certificate in Computer Systems Validation.
Certificate in in Regulatory Affairs (Medical/Pharmaceutical/Food and Drink

Master of Science in Product Design Control
Post Graduate Diploma in Science in Product Design Control (Full Time)
Post Graduate Diploma in Science in Product Design Control (Online)

Special Purpose Awards

Certificate in Product Design Control and Process Design Regulatory Affairs (Level 9, 20 Credits)
Certificate in Product Validation and Process Design Regulatory Affairs (Level 9, 20 Credits)
Certificate in Product Design Control and Quality Management (Level 9, 20 Credits)
Certificate in Product Design Control and Risk Management (Level 9, 20 Credits)
Certificate in Product Risk Management and Process Design Regulatory Affairs (Level 9, 20 Credits)
Certificate in Product Validation and Project Management (Level 9, 20 Credits)
Certificate in Product Validation and Risk Management (Level 9, 20 Credits)
Certificate in Project and Quality Management (Level 9, 20 Credits)
Certificate in Project and Risk Management (Level 9, 20 Credits)
Certificate in Quality Management and Process Design Regulatory Affairs (Level 9, 20 Credits)
Certificate in Quality and Risk Management (Level 9, 20 Credits)
Certificate in Project Management and Process Design Regulatory Affairs (Level 9, 20 Credits)

Bachelor of Engineering (Honours) in Automotive Engineering & Transport Management (Ab Initio)
Bachelor of Engineering (Honours) in Automotive Engineering & Transport Management (Add-on)
Bachelor of Engineering in Road Transport Technology and Management
Higher Certificate in Engineering in Automobile Technology
Bachelor of Engineering in Agricultural Engineering

Higher Certificate in Engineering in Agricultural Mechanisation

Bachelor of Science in Aircraft Maintenance Engineering

Special Purpose Awards - Flexible Learning programmes:
Certificate in Aircraft Lease Transition (Level 7, 30 Credits)
Certificate in Aircraft Leasing (Level 7, 10 ECTS Credits)
Certificate in Aircraft Records Technician (Level 7, 10 ECTS Credits)
Certificate in Aircraft Technical Services (Level 7, 30 ECTS Credits)
Certificate in Aviation (Level 6, 10 ECTS Credits)
Certificate in Continued Airworthiness Management Organisation (Level 7, 10 ECTS Credits)
Certificate in Part 21 Design Technician (Level 7, 10 ECTS)

Certificate in Advanced Vehicle Diagnostics and Electrical Systems (Level 7, 10 ECTS Credits)
Certificate in CPC Training for Road Transport and Fleet Operation (Level 7 10 ECTS Credits)
Certificate in Heavy Vehicle Diagnostics (Level 6, 10 ECTS Credits)
Certificate in Transport Safety Management (Level 6, 10 ECTS Credits)

The programmes are revalidated subject to the following condition and recommendations:

3.2 CONDITIONS

3.2.1 Conduct a full review of the Work Placement module and ensure that it is fully supported and resourced by Department Staff. Ensure that the learning outcomes of any alternative to Work Placement are equivalent to the learning outcomes of the Work Placement module and develop a Module Descriptor for this alternative module.

3.3 RECOMMENDATIONS

General

3.3.1 Include further reference reflecting on the establishment of TUS in the self-evaluation documentation and opportunities that may arise from becoming a Technological University.

3.3.2 Explore how the development of the Coonagh Campus can be expedited. The panel notes that programme have been developed on the assumption that the campus resource would be in place.

3.3.3 Review the Practical/Workshop and computer lab spaces to ensure they meet the requisite requirements and suitability for programme provision. Consider how out of class access to relevant learning spaces can be supported.

3.3.4 Ensure that Students have access to dedicated learning spaces for Final Year Projects (FYP). The FYP in the Precision Engineering needs further resourcing.

3.3.5 Ensure that there is investment in equipment and resources for the programmes are in place. There should be a continuous rolling investment in core learning resources (resources for Metal Additive Manufacturing and Automotive Robotic Cells are highlighted in particular).

3.3.6 Recruitment of staff should be prioritised to cover the hours required for teaching across the programme suite.

3.3.7 Ensure further learning content on the development of soft skills such as interpersonal communication, presentation skills, writing skills including email etiquette. It is very important that the development of soft skills is integrated into both learning outcomes and assessment.

3.3.8 That students provide potential employers with a transcript of their academic record in addition to CV's when applying for placement.

3.3.9 Update the programme documentation to indicate the progression requirements from Level 6 to Level 7 programmes and Level 7 to Level 8 programmes consistently show a 40% minimum grade is required.

3.3.10 Explore how Student in the Department could be further supported to access international/study abroad learning opportunities such as Erasmus.

3.3.11 Consider further how gender balance can be promoted for student participation across the programmes.

3.3.12 The panel noted that for a Programmatic Review an onsite event would be preferable to an online event. The option of a site visit would be particularly beneficial and is a necessary part of the process

3.3.13 Give further consideration to the organisation/presentation and volume of documentation presented. The panel noted that it was difficult to navigate within a volume of files provided.

3.3.14 Add further learning content on Financial and Cost Management to increase commercial awareness to the *Engineering Operations Management* module.

3.3.15 Align the titles of the Product Design Control Special Purpose Awards as listed in Part A of the Programme document with the titles as included in the Module Manager documentation.

3.3.16 Broaden the content of the Stage 4 Module *National & International Transport Law* in the Bachelor of Engineering (Honours) in Automotive Engineering & Transport Management to include more than contractual law. Explore more of the Irish legal system and context.

3.4 COMMENDATIONS AND OBSERVATIONS

3.4.1 The panel commends the Department on the diverse programme portfolio offered by the Department noting that the programme portfolio is aligned with the requirements of industry.

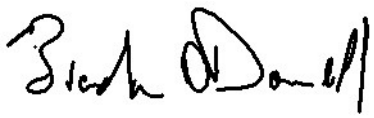
3.4.2 The panel commends the Department on its extensive links with industry an on the range of collaborative and flexible learning programmes offered.

3.4.3 The panel commends the inclusion of Work Placement in the revised programmes.

3.4.4 The panel commends the Department on the clear progression pathways evident across the programme suite.

3.4.5 The panel appreciates that the programmatic review and associated meetings were conducted during the Covid-19 pandemic and commends the efforts of the Department for completing it in this context.

3.4.6 The panel commends the programme team for their positive engagement during the course of the revalidation visit.



12/09/2022

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Signature of Chairperson and Date