



TUS

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

Ollscoil Teicneolaíochta na Sionainne:
Lár Tíre Iarthar Láir

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**Dámh an Ghnó agus Fáilteachais
Faculty of Engineering and Informatics**

Report of Peer Review Panel

Programmatic Review

of the

**Faculty of Engineering and Informatics
Department of Civil Engineering and Trades**

External Validation Visit, 4th May 2023

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1.0 INTRODUCTION

This report outlines, in summary form, the proceedings of the Programmatic Review Panel for the Faculty of Engineering and Informatics, and the findings and conclusions of the External Validation Panel conducted on 4th May 2023. The external validation visit was undertaken in accordance with TUS Academic Regulations. A Programmatic Review Panel 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	Engineering and Informatics
Department	Civil Engineering and Trades
Date of Visit	4 th May 2023

2.2 External Re-Validation Panel of Expert Assessors

Name	Affiliation
Mr Vincent McCarthy	Former President, Limerick Institute of Technology
Dr Gertie Taggart	Former Head of Faculty of Engineering, ATU, Letterkenny
Dr Salem Gharbia	Acting Head of Department of Civil Engineering & Construction, ATU, Sligo
Ms Irene Hayden	Lecturer, ATU, Galway
Dr James Byrne	Assistant Professor, DCU Business School
Mr Justin Molloy	CIF Western & Midland Region
Grainne Connolly	Engineer Grade II, Marine Engineering Division Department of Agriculture, Food and the Marine

Secretary to Panel: Dr. Michael F. Ryan.

2.3 TUS Staff

Name	Role
Dr Sean Lyons	Dean of Engineering and Informatics
Alan Duffy	Head of Department of Civil Engineering and Trades
Department Staff: Brendan Turley, Chris Hannevig, Cyril Morris, Finola Deavy, Joe Keogh, John O'Callaghan, Michael McMahon, Paul Dolan, Stephen Harney, Cyril Morris, Brian Mullarney, Dr Marc Cashin, Juraj Knotek, Michael McLoughlin, Dr Niall Burke	

2.4 Employers/Industry & Alumni Representatives

Representative	Affiliation
Billy Bourke	Malachi Cullen Consulting Engineers Ltd
Niall Duffy	Duffy Contractors
Brian McKiernan	King and Moffatt
David Hughes	Rose Patrick
Neil Corcoran	Quantity surveying
Faye Conroy	Quantity surveying
Amy Brett	Quantity surveying
Zye Shian Oi	Quantity surveying
Ronan McDonnell	Construction management
Damian McGrath	Construction management
Finbarr Murray	Construction management
Marie-Claire Daly	Engineering management
Clionnaidh Kelly	Engineering management

2.5 Current Student Representatives

Representative	Affiliation
Kieran Roddy	Civil Engineering
Shannon Russell	Civil Engineering

Cathal Reynolds	Civil Engineering
Niamh Arthur	Quantity surveying
Kieran Leonard	Quantity surveying
Eoin Boland	Quantity surveying
Kieran Leonard	Quantity surveying
John Paul McBride	Hdip in Data Capture
Ronan Niland	Engineering management
Shaun Mc Devitt	Engineering management
Miguel Dias	Engineering management

3.0 FINDINGS AND RECOMMENDATIONS OF EXTERNAL VALIDATION PANEL

3.1 Main Findings

The External Validation Panel of Assessors recommends reapproval of the following programmes in the Department of *Civil Engineering and Trades* subject to the conditions recommendations as specified in Sections 3.2 and 3.3.

List of programmes presented for review:

- Bachelor of Science (Hons) in Quantity Surveying, Level 8 ab-initio
- Bachelor of Science in Quantity Surveying, Level 7 Exit Award
- Higher Certificate in Science in Quantity Surveying, Level 6 Exit Award
- Bachelor of Science (Hons) in Construction Management, Level 8 ab-initio
- Bachelor of Science in Construction Management, Level 7 Exit Award
- Higher Certificate in Science in Construction Management, Level 6 Exit Award
- Higher Certificate in Engineering in Civil Engineering, Level 6
- Bachelor of Engineering in Civil Engineering Add-on, Level 7
- Bachelor of Engineering in Civil Engineering, Level 7 Ab-initio
- Higher Certificate in Engineering in Civil Engineering, Level 6 (Embedded)
- Bachelor of Engineering (Hons) in Civil Engineering, Level 8 Add-on (2 Year add-on)
- Bachelor of Engineering (Hons) in Civil Engineering, Level 8 Ab-initio
- Bachelor of Engineering in Civil Engineering, Level 7 Exit Award

- Higher Certificate in Engineering in Civil Engineering, Level 6 Exit Award
- PG Diploma in Engineering in Engineering Management, Level 9 (60 Credits) (Springboard)
- Master of Engineering in Engineering Management, Level 9 (PgD + 30 Credits)
- Master of Engineering in Energy Infrastructure, Level 9 (Springboard) Associated programme
- AL_EPEEI_9 PG Diploma in Engineering in Energy Infrastructure, Level 9
- BSc (Hons) in Construction Management, Level 8 Add-on (DASBE/HCI) 2 years add-on
- AL_CCONS_O SPA in Construction Management, Level 8 Exit Award (Year 1 of the above 40 credits)
- Higher Diploma in Construction Data Capture and Analytics, Level 8 (ALL DASBE) Associated programmes
- AL_EDCHC_8 Certificate in Construction Data Capture and Analytics, Level 8 (40 credits (Individual Cert))
- AL_E3DLA_8 SPA in 3D Laser Scan Technology, Level 8 (10 Credit, individual Cert)
- AL_CBIMF_8 SPA in BIM Fundamentals, Level 8 (10 Credit, individual Cert)
- AL_CPSPDP_8 SPA in Post Survey Data Processing, Level 8 (10 Credit, individual Cert)
- AL_CCDCD_8 SPA in Digital Construction Management, Level 8 (10 Credit, individual Cert)

3.2 Conditions

No conditions apply.

3.3 Recommendations

General:

- I. Consider renaming and rebranding the title of the Dept – ‘Civil Engineering and Trades’ & possibly consider ‘The Built Environment’ as an option.
- II. Explore further opportunities for sharing resources across both midlands and mid-west campuses.
- III. Continue to develop a range of initiatives (STEPS + others) to attract more female staff and students (including ongoing work with Guidance Counsellors and

working to address unhelpful perceptions such as mathematics being a deterrent).

- IV. Clarify the placement process and outline how it is managed and supported during the summer months (particularly support mechanisms for students who experience difficulties).
- V. Increase and formalise the liaison and communication process between the placement agency and faculty, such as meetings every second month - to ensure positive outcomes.
- VI. Outline in the documentation the quality assurance process regarding the role of External Examiners and how their feedback is integrated into ongoing programme improvement.
- VII. Address where possible retention and attrition issues, by improving induction and student supports in areas where barriers to success are identified.
- VIII. Continue to strike a balance between serving the needs of relevant professional bodies (Engineers Ireland, CIF & SCSl) while also providing students with an all-round and balanced educational experience.
- IX. Include in the submission documentation a summary of commendations and recommendations, arising from the professional body accreditation process.
- X. Review overall assessment processes and find an appropriate balance between continuous assessment and final exams.
- XI. Provide an assessment schedule for students at the commencement of each stage; review the profile of assessments (10 presentation assessments in one semester of one programme-cited by students) and ensure assessments are spread across the semester timeline and not clustered at the start and end of semesters.
- XII. Outline processes for addressing academic integrity challenges associated with AI and in particular 'ChatGPT'.
- XIII. Provide further information to support the development of communication skills - both written and verbal (to include technical writing and formal written communications) across the programme and provide clarification on how the proposed communications module is currently assessed.
- XIV. Increase the emphasis placed on QS on the undergraduate programme and ensure that '*quantity take-off and pricing*' is covered before end of year 2 - so that students have this competency before industry placement in year 3.

- XV. Ensure that faculty has access to qualified QS Personnel and associated expertise to resource the programme.
- XVI. Include a greater focus on 'Off-site construction' (MMC) and how it might be integrated into engineering & manufacturing components of the programme.
- XVII. Make explicit programme content to address; Climate Action targets including: climate neutrality and resilience of infrastructure; sustainable development with a view toward restorative and regenerative practices; embodied carbon & overall preparation of students for public sector climate targets.
- XVIII. That "carbon accounting" and bill of carbon be included in both QS programmes group 1 and the Civil Engineering programmes - group 2.
- XIX. Integrate an additional focus on the move away from linear economy to more circular economy models within the programmes particularly with regard to materials used in construction (construction and demolition waste).
- XX. Develop a strategy to improve student engagement and face to face attendance on QS programmes including: team-based assessments (requiring reflection on team engagement), guest lecturers and appropriate active learning strategies for student engagement.
- XXI. Ensure that student representative processes are formalised and operational as per QA handbook.
- XXII. Consider an introductory input on schematics (mechanical & electrical).
- XXIII. Consider employer request for civil engineering technicians who could be qualified from the provision of level 6 & 7 Civil Engineering programmes.

(See additional recommendations -following Group 3 Programmes)

Group 2 Programmes:

- Higher Certificate in Engineering in Civil Engineering, Level 6
- Bachelor of Engineering in Civil Engineering Add-on, Level 7
- Bachelor of Engineering in Civil Engineering, Level 7 Ab-initio
- Higher Certificate in Engineering in Civil Engineering, Level 6 (Embedded)
- Bachelor of Engineering (Hons) in Civil Engineering, Level 8 Add-on (2 Year add-on)
- Bachelor of Engineering (Hons) in Civil Engineering, Level 8 Ab-initio
- Bachelor of Engineering in Civil Engineering, Level 7 Exit Award
- Higher Certificate in Engineering in Civil Engineering, Level 6 Exit Award

- I. Introduce Mathematical Modelling earlier in the B Engr programme
- II. Develop strategies to enhance the integration of Irish and Chinese students on the programme so that mutual intercultural competencies are nurtured, particularly intercultural communication through group and team work processes.
- III. Embed the principles of sustainability across modules - similar to QS recommendations (see recommendations XVII & XVIII and XIX).

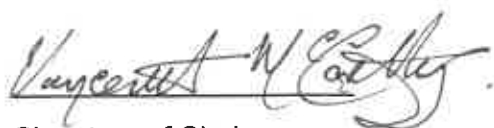
Group 3 Programmes:

- PG Diploma in Engineering in Engineering Management, Level 9(60 Credits) (Springboard)
- Master of Engineering in Engineering Management, Level 9 (PgD + 30 Credits)
- Master of Engineering in Energy Infrastructure, Level 9 (Springboard) Associated programme
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- AL_CPSPD_8 SPA in Post Survey Data Processing, Level 8 (10 Credit, individual Cert)
- AL_CCDCD_8 SPA in Digital Construction Management, Level 8 (10 Credit, individual Cert)

- I. Make the mandatory and elective streams more explicit on the Master's programme documentation and clearly identify the modules associated with each stream.
- II. Rationalise the three proposed streams into two (Industry 4.0 & Environmental & Energy Infrastructure).
- III. Ensure adequate resourcing for the full-time on-site Masters in Engineering Management Programme.

3.4 Commendations and Observations

- I. The panel commends the extensive documentation prepared for the review and in particular commends the quality of the Masters in Engineering programme.
- II. The panel commends the positive and collegiate engagement of the programme team during the validation visit.
- III. The panel commends the successful achievement of Professional Accreditation for relevant programmes (Engineers Ireland and SCSi) and the associated work to achieve this.
- IV. The panel commends the focus on industry collaboration integrated into the programme through placement and other initiatives.
- V. The panel also commend the international collaboration with partners in central China and the hosting of students from China on the engineering programme.
- VI. The panel commends the placement components and note the positive feedback from employers regarding the calibre of TUS students. The panel also note student satisfaction with the placement experience.



Signature of Chairperson

Date: 15 10 2023

