



ATHLONE INSTITUTE OF TECHNOLOGY

Faculty of Engineering and Informatics

Department of Civil Engineering and Trades

Report of External Validation Panel

External Validation Visit, Thursday, 23rd September, 2021

Suite 1: Construction Data Capture and Analytics (Level 8)

Primary Award: Higher Diploma in Engineering Construction Data Capture and Analytics (60 Credits)

Embedded in the primary award are a range of sub-awards / exit awards:

- Certificate in “Construction Data Capture and Analytics”, Level 8, 40 credits
- Certificate in “3D Laser Scan Technology”, Level 8, 10 credits
- Certificate in “Digital Surveying Techniques” Level 8, 10 credits
- Certificate in “Post-Survey Data Processing” Level 8, 10 credits
- Certificate in “Digital Construction Data”, Level 8, 10 credits

Suite 2: Virtual Design and Construction (Level 8)

Primary Award: Higher Diploma in Engineering in Virtual Design and Construction (60 Credits)

Embedded in the primary award are a range of sub-awards / exit awards:

- Certificate in “Virtual Design and Construction”, Level 8, 40 credits
- Certificate in “Scan to BIM”, Level 8, 15 credits
- Certificate in “Virtual Design & Visualisation” Level 8, 15 credits

Change in Award Designation for following Level 9 programmes:-

- Master of Science in Energy Infrastructure **to** Master of Engineering in Energy Infrastructure
- Postgraduate Diploma in Science in Energy Infrastructure **to** Postgraduate Diploma in Engineering in Energy Infrastructure

1. INTRODUCTION

This report outlines, in summary form, the proceedings of the External Validation visit for the proposed programmes listed below and the findings and conclusions of the External Validation Panel conducted virtually online on 23 September, 2021:

Suite 1: Construction Data Capture and Analytics (Level 8)

Primary Award: Higher Diploma in Engineering in Construction Data Capture and Analytics (60 Credits)

Embedded in the primary award are a range of sub-awards / exit awards:

- Certificate in “Construction Data Capture and Analytics”, Level 8, 40 credits
- Certificate in “3D Laser Scan Technology”, Level 8, 10 credits
- Certificate in “Digital Surveying Techniques” Level 8, 10 credits
- Certificate in “Post-Survey Data Processing” Level 8, 10 credits
- Certificate in “Digital Construction Data”, Level 8, 10 credits

Suite 2: Virtual Design and Construction (Level 8)

Primary Award: Higher Diploma in Engineering in Virtual Design and Construction (60 Credits)

Embedded in the primary award are a range of sub-awards / exit awards:

- Certificate in “Virtual Design and Construction”, Level 8, 40 credits
- Certificate in “Scan to BIM”, Level 8, 15 credits
- Certificate in “Virtual Design & Visualisation” Level 8, 15 credits

Change in Award Designation for the following Level 9 programmes

- Master of Science in Energy Infrastructure **to** Master of Engineering in Energy Infrastructure
- Postgraduate Diploma in Science in Energy Infrastructure **to** Postgraduate Diploma in Engineering in Energy Infrastructure

The External Validation Visit was undertaken in accordance with the Procedures and Guidelines for the Design, Development, Evaluation and Withdrawal of Taught Programmes at Athlone Institute of Technology. The External Validation Panel makes an independent impartial judgement on the suite of programme proposals. The same Panel reviewed both suites of programmes.

2. GENERAL INFORMATION

2.1 Higher Education Provider

Institute: Athlone Institute of Technology
Faculty: Faculty of Engineering and Informatics
Department: Department of Civil Engineering and Trades
Date of Visit: September 23, 2021

2.2 Programmes Evaluated

Suite Number 1: Construction Data Capture and Analytics (Level 8)

Embedded in the primary award are a range of sub-awards/exit awards.

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|-------------------------------|--|
| 2.2.1 Programme Title: | Higher Diploma in Construction Data Capture and Analytics (Primary Award) |
| Award Type: | Higher Diploma in Engineering |
| NFQ Level: | Level 8 |
| ECTS Credits: | 60 Credits, Special Purpose Award |
| Delivered By: | Full Academic Year |
| Delivery Mode: | Blended |
| Duration: | One Year |
| Proposed starting date: | September 2021 |
| Contact: | Dr. Sean Lyons |
| 2.2.2 Programme Title: | Certificate in Construction Data Capture and Analytics |
| Award Type: | Certificate in Engineering |
| NFQ Level: | Level 8 |
| ECTS Credits: | 40 Credits, Special Purpose Award |
| Delivered By: | Full Academic Year |
| Delivery Mode: | Blended |
| Duration: | One Year |
| Proposed starting date: | September 2021 |
| Contact: | Dr. Sean Lyons |
| 2.2.3 Programme Title: | Certificate in 3D Laser Scan Technology |
| Award Type: | Certificate in Engineering |
| NFQ Level: | Level 8 |
| ECTS Credits: | 10 Credits, Special Purpose Award |

Delivered By: Semester
Delivery Mode: Blended
Duration: One Year
Proposed starting date: September 2021
Contact: Dr. Sean Lyons

2.2.4 Programme Title: Certificate in Digital Surveying Techniques
Award Type: Certificate in Engineering
NFQ Level: Level 8
ECTS Credits: 10 Credits, Special Purpose Award
Delivered By: Semester
Delivery Mode: Blended
Duration: One Year
Proposed starting date: September 2021
Contact: Dr. Sean Lyons

2.2.5 Programme Title: Certificate in Post-Survey Data Processing
Award Type: Certificate in Engineering
NFQ Level: Level 8
ECTS Credits: 10 Credits, Special Purpose Award
Delivered By: Semester
Delivery Mode: Blended
Duration: One Year
Proposed starting date: September 2021
Contact: Dr. Sean Lyons

2.2.6 Programme Title: Certificate in Digital Construction Data
Award Type: Certificate in Engineering
NFQ Level: Level 8
ECTS Credits: 10 Credits, Special Purpose Award
Delivered By: Semester
Delivery Mode: Blended
Duration: One Year
Proposed starting date: September 2021
Contact: Dr. Sean Lyons

Suite Number 2: Virtual Design and Construction (Level 8)

Embedded in the primary award are a range of sub-awards/exit awards.

- 2.2.7 Programme Title:** Higher Diploma in Virtual Design and Construction
Award Type: Higher Diploma in Engineering (**Primary Award**)
NFQ Level: Level 8
ECTS Credits: 60 Credits
Delivered By: Full Academic Year
Delivery Mode: Blended
Duration: One Year
Proposed starting date: September 2021
Contact: Dr. Sean Lyons
- 2.2.8 Programme Title:** Certificate in Virtual Design and Construction
Award Type: Certificate in Engineering
NFQ Level: Level 8
ECTS Credits: 40 Credits
Delivered By: Full Academic Year
Delivery Mode: Blended
Duration: One Year
Proposed starting date: September 2021
Contact: Dr. Sean Lyons
- 2.2.9 Programme Title:** Certificate in Scan to BIM
Award Type: Certificate in Engineering
NFQ Level: Level 8
ECTS Credits: 15 Credits
Delivered By: Semester
Delivery Mode: Blended
Duration: One Year
Proposed starting date: September 2021
Contact: Dr. Sean Lyons
- 2.2.10 Programme Title:** Certificate in Virtual Design and Visualisation
Award Type: Certificate in Engineering
NFQ Level: Level 8
ECTS Credits: 15 Credits
Delivered By: Semester
Delivery Mode: Blended
Duration: One Year
Proposed starting date: September 2021
Contact: Dr. Sean Lyons

2.2.11 Change in Award Designation for the following Level 9 programmes:-
Master of Science in Energy Infrastructure **to** Master of Engineering in Energy Infrastructure and
Postgraduate Diploma in Science in Energy Infrastructure **to** Postgraduate Diploma in Engineering in Energy Infrastructure

2.3 External Validation Panel of Expert Assessors

Mr. Paschal Meehan (**Chairperson of Panel**),
Former Dean of Work-Based Learning & VP International,
Limerick Institute of Technology.
E-mail: paschal.meehan@gmail.com

Mr. Neil Robson,
Contracts Manager with BAM Building,
BAM Ireland.
Mobile: 087 109 5395
E-mail: nrobson@bamcontractors.ie

Mr. Colin Garry,
Digital Construction Specialist,
BAM Ireland.
Mobile: 087 1482206
E-mail: colingarry77@gmail.com

Dr. Ian O'Connor,
Head of Department of Graduate Studies and Professional Development,
Galway-Mayo Institute of Technology.
E-mail: ian.oconnor@gmit.ie

Mr. Dan O Sullivan,
Lecturer,
Department of Built Environment,
Carlow Institute of Technology.
E-mail: dan.osullivan@itcarlow.ie
Phone: 059 9175436

Dr. Brian Murphy (**Secretary to Panel**)
Senior Lecturer,
Department of Pharmaceutical Sciences and Biotechnology,
Athlone Institute of Technology.
E-mail: bmurphy@ait.ie

2.4 AIT Staff Present

Ms. Frances O'Connell,
Vice-President for Academic Affairs & Registrar
E-mail: foconnell@ait.ie

Dr. Sean Lyons,
Dean of Faculty of Engineering and Informatics
E-mail: slyons@ait.ie

Programme Development Team

Dr. Attracta Foley, E-mail: afoley@ait.ie
Ms. Finola Deavy, E-mail: fdeavy@ait.ie
Ms. Yvonne Hennessy, E-mail: yhennessy@ait.ie
Mr. Chris Hannevig, E-mail: channevig@ait.ie

Industry Advisors to the Programmes

Mr. Seamus Foley,
Contracts Manager,
Chartway Civil Engineering.
E-mail: foleysn@hotmail.com

Mr. Juraj Knotek,
Digital Construction Specialist,
BAM.
E-mail: knotek72@gmail.com

Mr. Antonio Ianni,
Conack Construction.
E-mail: antonioianni@live.ie

3. FINDINGS AND RECOMMENDATIONS OF EXTERNAL VALIDATION PANEL

3.1. Main Findings

- The External Validation Panel is recommending approval of the following suite of programmes, to the Academic Council of Technological University of the Shannon: Midlands Midwest (post October 1, 2021) subject to one condition (Section 3.2). The Panel is proposing a series of recommendations (Section 3.3) pertaining to these programmes for the Department of Civil Engineering and Trades, in the Faculty of Engineering and Informatics on the TUS Athlone campus and the Programme Teams to consider:

Suite 1: Construction Data Capture and Analytics (Level 8)

Primary Award: Higher Diploma in Engineering in Construction Data Capture and Analytics (60 ECTS Credits)

Embedded in the primary award are a range of sub-awards / exit awards:

- Certificate in “Construction Data Capture and Analytics”, Level 8, 40 ECTS credits
- Certificate in “3D Laser Scan Technology”, Level 8, 10 ECTS credits
- Certificate in “Digital Surveying Techniques” Level 8, 10 ECTS credits
- Certificate in “Post-Survey Data Processing” Level 8, 10 ECTS credits
- Certificate in “Digital Construction Data”, Level 8, 10 ECTS credits

Suite 2: Virtual Design and Construction (Level 8)

Primary Award: Higher Diploma in Engineering in Virtual Design and Construction (60 ECTS Credits)

Embedded in the primary award are a range of sub-awards / exit awards:

- Certificate in “Virtual Design and Construction”, Level 8, 40 ECTS credits
- Certificate in “Scan to BIM”, Level 8, 15 ECTS credits
- Certificate in “Virtual Design & Visualisation” Level 8, 15 ECTS credits

- The External Validation Panel assessed the suite of programmes in accordance with Athlone Institute of Technology’s (AIT’s) Quality Assurance and Enhancement Procedures.
- The Panel also support the proposed change in title of the Master of Science in Energy Infrastructure to the title of Master of Engineering in Energy Infrastructure and the change in title of the corresponding Post Graduate Diploma in Science in Energy Infrastructure to the title of Post Graduate Diploma in Engineering in Energy Infrastructure.

3.2. Conditions

The Panel lists one condition associated with the entry level requirements in relation to both the Level 8 Higher Diploma in Engineering in Virtual Design and Construction and the Level 8 Higher Diploma in Engineering in Construction Data Capture and Analytics:

- The current statements cited in the Programme Documentation for the entry level requirements for both the Level 8 Higher Diploma in Engineering in Virtual Design and Construction and the Level 8 Higher Diploma in Engineering in Construction Data Capture and Analytics should be amended to a Level 8 qualification in engineering or cognate disciplines. Applicants may be considered from engineering or cognate disciplines with a Level 7 qualification however on a case-by-case basis through the Recognition of Prior Learning (RPL) policy processes of TUS (post October 1, 2021).

3.3. Recommendations

The Panel proposes a series of recommendations pertaining to these programmes for the Department of Civil Engineering and Trades and the Programme Design Teams to consider:

General Recommendations applicable to both Suites of Programmes:

- All Programme Documentation should indicate the expected number of students that will register on these programmes and include an outline of the strategic plan associated with the proposed sustainability and longevity of the programmes.
- The Panel recommends strongly that an additional Advisory note should be included in the Profile of Programme Target Learners in the Programme Documentation that target learners would have some previous prior knowledge of BIM software before commencing the programmes.
- The Programme Learning Outcomes (PLOs) across all programmes would benefit from further reflection by each Programme Team to ensure that they are unique to each programme and capture the essence of the aim of each programme. In addition, the PLOs for each embedded award should be revised to reflect the scale and breath of each award distinguishing them from the PLOs for each primary Higher Diploma award.
- The Teaching and Learning Strategies at both the Programme and Module levels should be revised and made more concise to reflect greater focus on the Teaching and Learning Strategies associated with each unique programme and each module therein.
- The Programme Assessment Strategies should also be reconsidered to reflect greater focus on the Programme Assessment Strategy associated with each unique programme.

- The Programme Teams should consider maximising the potential for the adoption of cross-modular assessment within each programme to ensure that possible over-assessment does not have a significant impact on learner workload. Each Programme Team and the Head of the Department should monitor closely on an annual basis the assessment schedule for learners registered on each programme and modify accordingly based on student and staff feedback.
- The Programme Documentation for each programme should include relevant detail on the employability outlets of graduates from these programmes.
- The revised Programme Documentation should provide greater detail and specific metrics around the findings from any advance market surveys carried out by the Programme Design Teams.
- The revised Programme Documentation should include a full Programme Graduate Attributes Mapping matrix.
- The Programme Teams should revise the verbs associated with the Learning Outcomes for each module across all programmes, to ensure that they are commensurate with a Level 8 qualification on the QQI National Framework of Qualifications (NFQ).

Additional Specific Recommendations associated with the Suite 1: Construction Data Capture and Analytics Programmes:

- The Panel recommends that the Programme Team for the Higher Diploma in Engineering in Construction Data Capture and Analytics reconsider whether it is feasible to deliver this 60 ECTS credit programme effectively on a part-time basis over two semesters, and to consider the appropriateness and impact of this intensive, delivery model on the part-time learner.
- In the Approved Programme Schedule for the Higher Diploma in Engineering in Construction Data Capture and Analytics, the assessment total for the module, 3D Laser Scan Technology should be corrected to indicate a total of 100%.
- The wording of PLO2 in particular should be revised to correlate more appropriately with the Higher Diploma in Engineering in Construction Data Capture and Analytics programme.
- The Calendar of Assessment should be re-examined for the programme (in particular Semester 2), to ensure that assessments are evenly spread over the semester, to mitigate potential learner workload.
- The Panel recommends that the Programme Team reconsiders the appropriateness of the title of the Digital Construction Data module in light of the content of topics delivered.

Additional Specific Recommendations associated with the Suite 2: Virtual Design and Construction Programmes:

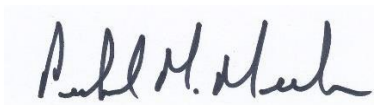
- The Award Class for the Higher Diploma in Engineering in Virtual Design and Construction in the Programme Documentation needs to be corrected from an Honours Degree Add-On to a Higher Diploma.
- The Panel recommends that the Programme Design Team would re-examine the entire suite of assessments on this programme to ensure that there are no overlapping assessments, especially in areas where there are two distinct strands, such as visualisation and management.
- The Panel recommends that the Programme Team would closely monitor the degree of content delivered, in particular through the extensive number of 5 ECTS modules that are delivered within the programme and monitor the number of registered learners taking the entire programme on a regular basis to ensure that the Higher Diploma in Engineering in Virtual Design and Construction in its entirety as a programme has both viability and identity.

3.4. Commendations and Observations

3.4.1. The Panel commended the Programme Design Teams on developing a highly innovative suite of programmes, which address current skills shortages across the construction sector. The Panel commends in particular the range of associated embedded awards which provide choice and flexibility of access to learners.

3.4.2. The Panel commended the Programme Design Team for their extensive and intended engagement with the sector which enriches the learning environment and experience of learners on these programmes. The inclusion of industry experts in the design element of both suites of programmes is a particularly strong feature of these programme proposals.

3.4.3. The Panel commended the evident enthusiasm of the Programme Design Teams and their strong and positive engagement with the Panel.



Signature of Chairperson

Dated: 27 October 2021

