



**Institute of Technology Sligo**  
**INSTITIÚID TEICNEOLAÍOCHTA SLIGEACH**

**PROGRAMME VALIDATION REPORT**

**Date of Evaluation: May 27th 2019**

**Programmes Evaluated:**

- 1. Master of Engineering in Geotechnical and Structural Engineering**
- 2. Post Graduate Certificate in Engineering in Road Engineering and Design**
- 3. Certificate in Bridge Engineering**

**Unique Programme**

**Reference Number PRN:**

**Panel of Assessors:**

Mr Stephen Mc Manus  
(Chairperson)

Retired Registrar (DKIT)

Mr Francis Fidgeon

Partner, CST Group Chartered Consulting Engineers group,  
Sligo

Mr Des Walsh

Head of Department- Civil, Structural and Environmental  
Engineering, Cork Institute of Technology.

Dr Declan Phillips

Senior Lecturer, Department of Civil Engineering & Material  
Science, University of Limerick

Dr Michele Glacken

Assistant Registrar  
Institute of Technology Sligo

**Declaration Regarding Any Conflicts of Interest**

The members of the Panel signed a form confirming that they did not have any conflict of interest.

- 1. Master of Engineering in Geotechnical and Structural Engineering**
- 2. Post Graduate Certificate in Engineering in Road Engineering and Design**
- 3. Certificate in Bridge Engineering 1**

## Meeting with Institute, Faculty and Department Management

### Attendees:

- Dr Brendan Mc Cormack, President
- Mr Colin Mc Lean, VP for Academic Affairs & Registrar
- Mr Trevor Mc Sharry, Head of Department
- Dr Pat Naughton, Programme Leader

The President provided an overview of the Institute in terms of its strategic plan, student numbers, facilities, proposed infrastructural developments, TU ambitions and the required research metrics for attainment of same.

### **Programme rationale**

The Head of Department shared with the programme team the context within which the Masters programme was developed which involved stakeholder feedback, other programme developments and academic expertise within the area. Whilst, the proposed programme has been developed so that it will be TU compliant in terms of the ECTS weighting of the thesis (60 ECTS) it also addresses a recognised issue that was occurring with the 30 ECTS thesis model, which often restricted students from developing their research to the degree they would have liked and/or was warranted. The focus of the proposed theses should be work based so industry will get “*added value*” from the introduction of this programme configuration. It is envisaged that there will be an initial intake of between 5-10 students per annum.

### **Staffing**

The quantum of staff required to deliver the programme and how this was going to be addressed was explored with the management team. The panel were informed that the Institute were currently recruiting for assistant lecturers, who will be deployed to reduce some of the teaching hours of the academic staff who are targeted to provide the supervision for the student theses and/or be in a possession of a doctorate in a relevant subject area, so they can become part of the supervision staffing compliment. The panel observed that there was only two academic staff members’ research active in the area. The team shared that there was two other academic staff members who have complimentary specialities that would have the capacity to provide supervision. In addition, they are considering the possibility of co-supervising with suitably qualified persons from industry or other H.E.I’s.

### **Quality Assurance processes**

The panel teased out with the team the discernible differences between a research masters and the proposed structured Masters programme with a significant ECTS allocation for the thesis element. The status of the quality assurances processes in relation to structured masters programmes (in particular the research element) was explored and the panel were advised the Department have internal processes to support theses development in relation to taught masters programmes and they intended developing similar processes for the 60 ECTS thesis. The panel advised that they would need rigorous quality assurance processes and that they should be developed by the Institute. In the interim, they advised the team to document all processes from topic selection to assessment. The role of the external examiner was also explored and needs to be made explicit in any quality assurance process developed.

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## **Programme title**

The panel shared with the team their concerns around the proposed programme title and whether it was a true reflection of the graduates' expertise on completion. Their contention was that the focus of the thesis which comprises 60 ECTS of the programme's ECTS load would dictate the specialism, and therefore as the title stands it would be misleading to future students and employers. The panel believed the team needed to reflect on same and furnished the team with some suggestions (e.g. Master of Engineering in Geotechnical with Structural Engineering and vice a versa).

## **Accreditation**

The panel clarified if it was their intention to seek accreditation for the programme with Engineers Ireland. It was clarified that it was the programme team's intention to seek accreditation and that during programme development due cognisance had been paid to the accreditation criteria.

## **Meeting with Programme Leads & Head of Department**

### Attendees:

- Mr Trevor Mc Sharry, Head of Department
- Dr Pat Naughton, Programme Lead
- Dr Brian Mc Cann, Programme Lead

## **Rationale and programme development process**

The Head of Department shared with the panel the impetus for programme development and the development process and how the Departments' experience with the Master in Engineering in Road Transport programme served as a useful platform to assist in the developmental process. The proposed programme should bridge the existing knowledge gap that both structural and geotechnical engineers have in relation to each other's subject expertise. The developmental process involved the development of two new modules (Soil-Structure Interaction & Design of Building Structures) to address industries identified needs and the division and restructuring of existing modules to provide more focus and content( e.g. Geotechnical engineering 1 & 2 ). The facilitation of on line exams through the online proctoring system in the college was discussed with the team. The panel queried the quality assurance processes around remote proctoring.

## **Aims & Objectives**

The panel teased out the specific Masters Programme objectives and how it was proposed to measure and achieving same in an online teaching/ assessing environment (e.g. Objective #3). The programme lead provided the panel with exemplars of how the stated objectives were going to be achieved and that the online environment is not a barrier to same. The programme team have amassed experience of facilitating online team working/ presentations and would deploy this experience for the proposed programme.

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The programme lead and Head of Department were advised that the programme outcomes as advanced were the generic standards for level 9 engineering programmes and that they needed to be reformulated to be more programme specific and reflective of QQI standards for Engineering programmes at level 9.

### **Delivery mode**

The programme leads were asked to detail to the panel how the proposed online delivery mode would work in practice in terms of induction, student preparation/support, students input at modular level in group activity/ engagement, number of synchronous delivery hrs per week, number of asynchronous hours, independent study hours per week and on site workshops etc. The programme lead was also questioned how student engagement was both maintained and monitored and the panel were provided with examples of a number of strategies that are currently in use on other programmes and would be instigated on the proposed programme. The mechanisms employed for providing on line students with research supervision was explored with the challenges of same acknowledged by the programme lead. Adobe connect and skype are currently used to facilitate supervision.

### **Programme access routes**

The panel explored with the team the proposed eligibility criteria of a 2.2 on a level 8 Engineering programme with the team, and whether graduates of programmes who have not Engineers Irelands Accreditation were going to be treated the same as graduates of accredited programmes. The discussion revealed that there was a lack of clarity around this issue and the team were advised by the panel that they needed to give further consideration to this eligibility criteria and to have a robust justification, if cohorts of graduates were going to be treated differently. The Institutes RPL process and other potential entry routes were detailed for the panel.

## **Meeting with Programme teams & Head of Department**

### Attendees:

- Mr Trevor Mc Sharry, Head of Department
- Dr Pat Naughton, Programme Lead\* & \*\*
- Dr Brian Mc Cann, Programme Lead \*\*
- Dr Tomas O Flaherty\*
- Dr David Collery\*
- Mr Bill O Kelly –Lynch \*\*
- Mr John Casserly \*\*

\*MEng Programme team

\*\* PGCert/Cert Programmes

The panel discussed with the MEng team each of the modules on the proposed Masters programme in terms of their content, mode of delivery and assessment. Overall, the panel felt each of the modules content were ambitious in terms of the amount of content to be covered in a relatively short time span. Particular attention was paid by the panel to project

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their current methodologies (e.g. Sizing the Slice, Team Charter). The panel were also

informed other software packages were also under consideration (e.g. Microsoft team). The panel discussed with the team the rationale behind the titles of some modules (Geotechnical Engineering 1 & 2) and whether they had considered other potential titles.

The panel provided the team with suggestions where required to make some modular content more explicit such as the mapping of Building Information Modelling. The panel queried if the research methods module currently being delivered on other programmes will provide sufficient foundation for the proposed thesis. The team informed the team that the students on the Masters programme will be receiving an addition one hour synchronous teaching a week and will be also receiving 1.5 hours individual supervision per week to support their thesis development. The panel discussed with the team if there was sufficient subject expertise in the Department to support theses development when the academic staff other supervision and teaching commitments are taken into account. The plans for recruitment were reiterated again and the teams expectation that there would be a limited number of applicants for the programme shared with the panel.

### **Post Graduate Certificate in Engineering in Road Engineering and Design Certificate in Bridge Engineering**

#### **Programmes Development**

The programme lead provided the panel with the rationale for the development of the programmes and how the development had been informed by a range of stakeholder feedback (e.g. Department of Transport, Transport Infrastructure Ireland, Local authority). A need for more engineering design was identified through this engagement. The content of the Post Graduate certificate is year 2 of the Master of Engineering in Road Engineering and Design. No new modules have been developed. The proposed stand-alone programme will give engineers the option of garnering more knowledge without having to commit to a Masters programme. The panel asked the team to consider the title as they felt it was quite cumbersome in its present form.

Likewise the Certificate in Bridge Engineering was developed on the basis of an identified need through stakeholder engagement. It entailed the development of no new modules. The panel queried whether it should be advanced as a minor award instead of a Special Purpose Award as the content is directly derived from a major award. The ECTS load lead the team to develop it as an SPA.

#### **Programme outcomes.**

The panel asked that the programme outcomes are rewritten so they are specific to each of the programmes, as in their present form they are too generic. They informed the team that they need to be match broadly to the QQI Engineering standards and the modules learning outcomes. The programme learning outcomes should detail the knowledge, skills and competencies that the student should have on programme completion.

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## **Modular content**

The modules were all existing modules with only minor modifications made to them since initial development. All of the modules had been reviewed as part of the MEng programme and required no further comment from the panel.

The panel thanked the teams for the participation. This concluded this session.

## **Decision of the Validation Panel**

The validation panel recommend all programmes for approval to Academic Council.

## **Master of Engineering in Geotechnical and Structural Engineering**

### **Commendations**

1. The panel commend the programme development teams' interaction with them during the validation interview process.
2. The panel commend the Institute and the Department for the provision of an online Masters level programme with a Geotechnical/ Structural Engineering focus

### **Conditions**

1. The programme team need to reflect on the title advanced at this juncture. The programme title should reflect the major subject element of the programme, which in this case, will vary depending on the focus of the thesis. Two programme titles may be needed to address this conundrum.
2. The programme team need to make the programme aim and objectives programme specific. In their current form they are too generic.
3. The programme team need to develop programme learning outcomes and align them to the Engineering standards at level 9; the mapping of module learning outcomes to programme outcomes needs to be documented.

### **Recommendations**

1. The programme team should make explicit the inclusion of Building Information Modelling within the programme learning outcomes.
2. The programme team need to be explicit in their programme documentation in relation to the graduates of Bachelor of Engineering (Level 8) programmes that are eligible to apply for the Masters programme and be able to justify the eligibility requirements.
3. Limit the intake of students until the staffing levels are in place which cater for the supervision requirements of the students on this programme.
4. The Institute should formalise the quality assurance processes in relation to structured Masters programmes including the role of external examiners regarding theses moderation. In the interim, the programme team should develop and document a process and procedure around thesis development, supervision and assessment.
5. The Institute should provide CPD opportunities to enhance the research supervision capacity of academic staff who have not supervised the development of research thesis of the proposed ECTS weighting.

6. The Institute should progress the development of the quality assurance process in relation to online proctoring.

### **Post Graduate Certificate in Engineering in Road Engineering and Design**

#### **Conditions**

1. The programme team need to make the programme aim and objectives, programme specific. In their current form they are too generic.
2. The programme team need to-develop programme learning outcomes and align them to the Engineering standards at level 9; the mapping of module learning outcomes to programme outcomes needs to be documented.

#### **Recommendation**

1. The programme team should consider if the proposed title could be more succinct

### **Certificate in Bridge Engineering**

#### **Recommendation**

1. Clarification should be sought on whether the programme meets the criteria for a Minor award.

**Signed on behalf of programme validation panel**



\_\_\_\_\_  
Mr Stephen Mc Manus  
Chairperson

Date: 31/05/19



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Dr Michele Glacken  
Recording Secretary/ Assistant Registrar

Date: \_\_\_\_\_

31.5.19