



Report of External Peer Review Group for the Programmatic Review of:

Named Award:	Bachelor of Engineering (Hons)
Programme Title(s):	Bachelor of Engineering (Hons) in Mechanical Engineering, L8 (4 years) Bachelor of Engineering in Mechanical Engineering, L7 (3 years) L8 (+1 year) Higher Certificate in Mechanical Engineering, L6
Exit Award(s):	Higher Certificate in Mechanical Engineering
Award Type:	Honours Degree, Ordinary Degree and Higher Certificate
Award Class:	Major
NFQ Level:	Level 6, 7 and Level 8
ECTS / ACCS Credits:	120, 180 and 240
Location:	Galway
Minor Award(s):	N/A

Panel Members

Name	Position	Organisation
Dr Brendan Mc Cormack	Chairperson	IT Sligo
Dr Larry Elwood	Secretary	GMIT
Dr David Tormey	IOT Member	IT Sligo
Prof David Timony	University Member	UCD
David Farrell	Professional Practitioner	ESB
Ronan Finn	Institute Graduate	Medtronic

Programme Board Team

Gerard Mac Michael	Ed Dunbar	Evelyn Ui Eachteirn
Laurentiu Dimache	Dr Patrick Delassus	Padraig Audley
Dr Carine Gachon	Dr Paul O'Dowd	Willie Geraghty
Dr Oliver Mulryan	Dr PJ Mc Allen	Sean Howe
Eilish Zaletel	Dr Thomas Roche	Vlad Teleanca
Deirdre Quinn	Gerard O'Donnell	Paul Ryan
Dr John Lohan	Dr Gabriel J. Costello	Dr Denis O'Mahoney
Dr Liam Morris	Dr Kate Goggin	James McGivern

1 Introduction

The following report to Academic Council is a validation panel report from an expert panel of assessors on:

Bachelor of Engineering (Hons) in Mechanical Engineering, L8 (4 years)
Bachelor of Engineering in Mechanical Engineering, L7 (3 years), L8 (+ 1 year)

The report is divided into the following sections:

- Background to Proposed Programme
- General Findings of the Validation Panel
- Programme-Level Findings
- Module-Level Findings

2 Background to Proposed Programme

See Programme Self Evaluation Report (SER) for more detailed information.

3 General Findings of the External Peer Review Group

The programme has been approved with no conditions and some recommendations which will be outlined later in the report.

The panel commented that the Self Evaluation document was well presented; there was excellent engagement with the panel and questions were well answered. Stakeholder feedback was good with 68% of employers welcoming the opportunity to give feedback. They were very positive in terms of the student's transferrable and technical skills. 80% of graduates were recruited with a level 8, which is good as the demand for the Level 8 programme has nearly doubled.

Students did tend to be weak in areas such as costing, and influencing. It was noted that First year retention in the Level 8 programme is better than the Level 7 entrants.

It was also noted that honours maths or a science subject is not a requirement for entry. What is notable over the last number of years is a lower standard of maths ability, and as a result students with poor maths ability tend to be the ones to drop out. Another point to note is that most students enter with Mechanical Engineering as their first preference, with the CAO entry points being one of the highest in the sector.

No major concerns were raised; however the absence of Level 8 accreditation with Engineers Ireland was a concern to the panel, as it would add great value to both programmes and graduates of the programmes.

Having considered the documentation provided and discussed it with the programme development team, the External Peer Review Group recommends the following:

Bachelor of Engineering (Hons) in Mechanical Engineering, L8 (4 years)
Bachelor of Engineering in Mechanical Engineering, L7 (3 years), L8 (+1 year)

Place an x in the correct box.

Accredited for the next five academic years or until the next programmatic review, whichever occurs sooner	
Accredited subject to conditions and/or recommendations	x
Re-designed and re-submitted to the same External Peer Review Group after additional developmental work	
Not Accredited	

Note:

Approval is conditional on the submission of a revised programme document that takes account of the conditions and recommendations outlined below (including conformance with the Codes of Practice of the Institute) and a response document describing the actions of the Department to address the conditions and recommendations made by the External Peer Review Group (EPRG). In this report, the term Condition is used to indicate an action or amendment which in the view of the EPRG must be undertaken prior to the commencement of the programme. Conditions are mandatory if the programme is to be approved. The term Recommendation indicates an item to which the Programme Board should give serious consideration for implementation at an early stage and which should be the subject of on-going monitoring.

4 Programme-Level Findings

This section of the report addresses the following programme level considerations:

- Evidence of reflection by the programme board to include, where relevant evidence of collaboration and engagement with other programmes from a similar discipline area within GMIT
- Demand
- Award
- Entry requirements
- Access, transfer and progression
- Retention
- Standards and Outcomes
- Programme structure
- Learning and Teaching Strategies
- Assessment Strategy
- Resource requirements
- Research Activity
- Quality Assurance
- Internationalisation
- Professional Practice (Work Experience / Internship etc)

4.1 Reflection, including internal and external engagement

<i>Consideration for the panel:</i>	Is there evidence of reflection in the SER of how the programme performed since the last programmatic review.
<i>Overall Finding:</i>	Yes

Commendation(s):

- The programme board were commended on the SER report

Condition(s):

- None.

Recommendation(s):

- Develop graduate profiles as a marketing tool on a link/ website etc. Review the communication of the programme, and look at the possibility of reaching out to schools as the perception of the course appears to be confusing.
- Conduct an analysis of the students who are leaving and develop an action plan to improve retention.

4.2 Demand

<i>Consideration for the panel:</i>	Is there a need for the programme and has evidence been provided to support it?
<i>Overall Finding:</i>	Yes

4.3 Award

<i>Consideration for the panel:</i>	Is the level and type of the award appropriate?
<i>Overall Finding:</i>	Yes

4.4 Entry Requirements

<i>Consideration for the panel:</i>	Are the entry requirements for the proposed programme clear and appropriate? Is there a relationship with this programme and further education?
<i>Overall Finding:</i>	Yes

Commendation(s):

- None

Condition(s):

- None.

Recommendation(s):

- Review the GPA minimum for progression to level 8

Note: Entry requirements are one of the highest in the sector, averaging 300 points. The standard of maths however tends to be poor; however there are maths tutorials available. A D in pass maths is the current minimum requirement, and if this was to be raised there would be a risk of losing students.

4.5 Access, Transfer and Progression

<i>Consideration for the panel:</i>	Does the proposed programme incorporate the procedures for access, transfer and progression that have been established by the HEA and as contained in the Institute's Quality assurance Framework (QAF) COP No.4?
<i>Overall Finding:</i>	Yes

Note: Quite a number of students from this course transfer to NUIG to complete Masters Programmes. Feedback provided to the panel, was that this course gave significant grounding for the purpose of pursuing Masters Programme at NUIG.

It should be clarified to students that, once they pass the level 7 they are eligible to transfer to the level 8 programme.

4.6 Retention

<i>Consideration for the panel:</i>	Does the proposed programme comply with the Institute norms for retention, both in first year and subsequent years? Are both elements of the First Year Experience {(i) Learning to Learn (now Learning and Skills Innovation) and (ii) PASS} embedded in this programme? Evidence of other retention initiatives?
<i>Overall Finding:</i>	Yes

Commendation(s):

- Learning to learn module has been tailored for this course and appears to be a positive change.
- Each lecturer takes a group of students and meets them weekly to discuss any issues

Condition(s):

- None.

Recommendation(s):

- Consider an attendance policy to tackle first year retention in particular. There is a pilot scheme currently being run in the Culinary Arts School, and if successful will be rolled out to the whole college.

Note:

First year retention in the Level 8 programme is better than the Level 7 entrants. Also the students progressing seem to be the stronger students in Maths and Science.

The programme board have reduced the number of exams and increased the number of continuous assessments. They have also reviewed the timetable and have put the more demanding modules in the morning. The programme board have also introduced new modules to provide students with more operational hands on exposure (See section 4.8.2)

4.7 Standards and Outcomes

<i>Consideration for the panel:</i>	Does the proposed programme meet the required award standards for programmes at the proposed NFQ level (i.e. conform to QQI Award Standards)? For parent award? For exit award (if applicable)? For Minor Award (if applicable)? For Special Purpose Award (if applicable)?
<i>Overall Finding:</i>	Yes

The awards standards requirements for programmes on the NFQ Framework can be found at http://www.hetac.ie/publications_pol01.htm

Commendation(s):

- None

Condition(s):

- None.

Recommendation(s):

- None.

4.8 Programme Structure

<i>Consideration for the panel:</i>	Is the programme structure logical and well designed and can the stated programme intended learning outcomes in terms of employment skills and career opportunities be met by this programme?
<i>Overall Finding:</i>	Yes

Commendation(s):

- None

Condition(s):

- None.

Recommendation(s):

- Recommend identifying what differences are between the learning outcomes of the course and Engineers Irelands learning outcomes, with a view to seeking accreditation for the Level 8 programme.

4.9 Learning and Teaching Strategies

<i>Consideration for the panel:</i>	Have appropriate learning and teaching strategies been provided for the proposed programme that supports Student Centred Learning (SCL)? Evidence of consideration of flexible delivery methods including eLearning?
<i>Overall Finding:</i>	Yes

Noted: Classes are more interactive, students are encouraged to share documents online, drop box and through the use of Moodle. Students tend to get the most benefit from lab work, project work and practicals as a learning method.

4.10 Assessment Strategies

<i>Consideration for the panel:</i>	Have appropriate programme assessment strategies been provided for the proposed programme (as outlined in the QQI/HETAC Assessment and Guidelines, 2009)?
<i>Overall Finding:</i>	Yes

Assessment strategies are required in line with HETAC's Assessment and Standards and should be considered by the programme EPRG. See (HETAC (2009) Assessment and

Standards, Section 4.6.1, page 33). Accordingly the assessment strategy should address the following (See (HETAC (2009) Assessment and Standards, Section 2.2.5, page 13) :

- Description and Rationale for the choice of assessment tasks, criteria and procedures. This should address fairness and consistency, specifically their validity, reliability and authenticity;
- Describe any special regulations;
- Regulate, build upon and integrate the module assessment strategies;
- Provide contingent strategy for cases where learners claim exemption from modules, including recognition of prior learning;
- Ensure the programme’s continuous assessment workload is appropriately balanced;
- Relate to the learning and teaching strategy;
- Demonstrate how grading criteria will be developed to relate to the Institutional grading system.

4.11 Resource Requirements

<i>Consideration for the panel:</i>	Does the Institute possess the resources and facilities necessary to deliver the proposed programme?
<i>Overall Finding:</i>	Yes

Note: Laboratory Resources a concern as they are always full; this is resulting in a constraint in taking on more students. Sharing of facilities maybe an option, in addition there is a plan to expand the Laboratories to try to facilitate more students once Health & Safety requirements are adhered to.

4.12 Research Activity

<i>Consideration for the panel:</i>	Evidence that Learning & Teaching is informed by research? Number of staff engaged in institutional/pedagogical research?
<i>Overall Finding:</i>	Yes

Note: Research appears to be well incorporated into the programme, and two research centres already exist in this department.

4.13 Quality Assurance

<i>Consideration for the panel:</i>	Does the proposed programme demonstrate how the Institute’s quality assurance procedures (QAF) have been applied and that satisfactory procedures exist for the on-going monitoring and periodic review of programmes?
<i>Overall Finding:</i>	Yes

4.14 Internationalisation

<i>Consideration for the panel:</i>	Does the proposed programme demonstrate how the syllabi represent an international dimension? Is there evidence of approaches to induct international students?
<i>Overall Finding:</i>	Yes

Note: There has been an increase in the number of international students. Overseas companies engage quite a bit with GMIT re the graduates.

4.15 Professional Practice (Work Experience / Internships etc)

<i>Consideration for the panel:</i>	Does the proposed programme incorporate professional practice as per the Institute's policy on professional practice (PP)? If not, is there evidence that PP is under consideration by the programme board?
<i>Overall Finding:</i>	Yes

Commendation(s):

- None

Condition(s):

- None.

Recommendation(s):

- Review the programme with the objective of incorporating a mandatory work placement of 6 months duration. Need to ensure Quality Assurance and appropriate management and specify learning outcomes and expectations from the start. The Panel proposes that work placement is allocated a minimum of 10 credits.

Note: Staff has to validate the work placement. Feedback from employer is that ideally it could be longer, a minimum of six months. Consider how feasible it would be to take out or reduce a module, perhaps stop third year earlier and fourth year later. Consider full year placement – is it an option? Student feedback is that it would be very beneficial, however would mean an additional year therefore a five year degree.

5.0 Module-Level Findings: General

In relation to the modules, the panel suggest that there is a review of some modules in terms of commonalities, and try to amalgamate where possible. In addition, to look at the work placement duration and if any modules can be reduced in order to increase the duration of the work placement.

5.1 Module Assessment Strategies

<i>Consideration for the panel:</i>	Have appropriate module assessment strategies been included in each Module Descriptor?
<i>Overall Finding:</i>	Yes

Commendation(s):

- None

Condition(s):

- None.

Recommendation(s):

- Review the number of assessments to ensure that students are not overloaded.
- Benchmark the learning outcomes with similar programmes across the sector and then review the contact hours as they currently appear to be too high with an average over the four years of 25 hours per week.
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Note: At the beginning of the year students are given an assessment matrix.

5.2 Module Level-Findings: Specific Named Modules

5.2.1 Module (Operations and Supply Chain Engineering) – New Module

Note: This module will form part of the new proposed Industrial Stream and its approval is subject to submission to the necessary codes of practice.

5.2.2 Module (Quality Engineering) – New Module

Note: This module will form part of the new proposed Industrial Stream and its approval is subject to submission to the necessary codes of practice.

5.2.3 Module (Lean Enterprise Engineering) – Currently an approved module

Note: This module will form part of the new proposed Industrial Stream

6.0 Student Findings

Student feedback was that the hands on experience and the practical elements were appealing in GMIT, as opposed to NUIG where it seems to be less. Most students had a general interest in woodwork / engineering in school, and most found the fact that they had done maths and physics in school a big advantage for first year. They commented on the fact that the contact hours were needed and the benefit of working in groups. The self-learning element was also good, albeit took time to get used to.

There was good support in year 1 and students commented on the big increase in workload in year 2, particularly up to Christmas. The “packaging” of the course, particularly in schools could be looked at, as there appears to be a misconception as to what is involved in the course, with many students under the impression that they would be fixing cars. It was noted by the students that this impacted on the number of dropouts. The students commented also that this misconception is more down to word of mouth rather than the actual brochure.

They felt overall that the workload was very high, and that more credits should be given for the final year project, currently only 10 credits. Their timetable was given within the first couple of weeks, and feedback was welcomed by the lecturers in terms of suggesting any changes, and students felt that lecturers were very accommodating in that regard.

The duration of work placement, currently 3 months, was viewed as too short. They see the introduction of the Industrial stream as good and would have done it if it had been available at the time. The students felt that the course had good job prospects, with over half having secured jobs already or at interview stage.

They were disappointed that the Level 8 programme is not accredited by Engineers Ireland. They also felt that the requirement to prepare 3 business plans in the final year, was too much duplication. Yearlong subjects they felt were a lot harder than semesterised one's, and felt that it was a lot more manageable being semesterised.

Overall students would recommend the course and do it again.

7.0 Stakeholder Engagement

No concerns were raised in relation to the stakeholder engagement.

8.0 Future Plans

The programme board are planning to introduce an Industrial Engineering Stream as it is seen to be increasingly relevant to Irish Industry and there are strong employment opportunities. There are also plans to consider a six month work placement for the ab-initio level 8 programme.

<i>Consideration for the panel:</i>	Evidence that the programme board considered and identified opportunities and signalled proposals for related new programme and award development.
<i>Overall Finding:</i>	Yes

Validation Panel Report Approved By:

Signed:



Dr Brendan McCormack
Chairperson

Date:

24/4/15