



# **Reaction to the ASIIN Evaluation Report: MCAST Pre-Warrant Qualification Course**

**Chamber of Engineers | 127, Professional Centre, Sliema Road,  
Gżira GZR 1633, Malta**

**E-Mail: [info@coe.org.mt](mailto:info@coe.org.mt) | Telephone: +356 2133 4858**



## Background

The Evaluation Report of the Pre-Warrant Qualifications Course, as prepared by the ASIIN Consult, was received by the Chamber of Engineers (CoE) on 17th July 2020 with feedback requested by the Engineering Profession Board (EPB) by 23rd July. As one of the stakeholders, the CoE feels compelled to provide feedback on the report to continue echoing the position of the body representing engineering professionals in Malta.

The primary conclusion that the CoE draws from the report is that ASIIN Consult's major concern is that the currently proposed Pre-Warrant Qualification Course (PWQC) by MCAST does not take into account the expert's review made back in 2017, and that it is not currently adequate to further qualify the graduates for the Warrant procedure. This concern is fully justified as it was raised by the CoE in its recommendations, and the conclusion is completely understandable.

Nonetheless, the CoE takes the opportunity to comment on some aspects of the report to ensure that the engineering community is aligned with these proposals from the expert panel. This report presents the CoE's position on the requirements, recommendations and the guiding principles set forward by the Consultants.

## The Requirements

In view of the statement regarding the past evaluation from ASIIN e.V., that the recommendations from the latter were not taken into account, the CoE feels that as a key requirement, MCAST should endeavour in restructuring entirely their proposed 30ECTS PWQC. This is a separate demand from the additional requirement laid by the experts requiring an engineering project.

These revamped 30ECTS credits can either be new courses specifically tailored for this PWQC or modules which have already been proposed in the new degree courses. In both circumstances however, it is imperative that a detailed assessment of the quality of these 30ECTS credits is made in terms of the technical content and assessment methods, perhaps in ASIIN's next visit.

The CoE is presenting its position (captioned in box) on each individual requirement (*italics*) listed hereunder as quoted from the report<sup>1</sup>:

- 1) *The PWQC needs to reflect traceably the individual engineering competence level of each graduate applying for the course and thus being catered to identify possible engineering education needs. The yardstick for this exercise has logically to be the learning outcome/competence profile of the newly designed Bachelor engineering courses. [D-1]*

Based on the conclusions of the previous 2017 evaluation report, in which there are remarks about the general deficiencies in the fundamental theoretical engineering principles of the courses being bridged, the CoE feels that work experience cannot make up for such lacking academic knowledge. Based on this, an individual assessment of each PWQC applicant is not necessary



- 2) *In addition to the (formal) admission procedure for the PWQC, a monitoring instrument for the individual engineering competence level of the potential Warrant applicant must be in place. This should enable MCAST to identify individually missing engineering competences or, alternatively, recognize engineering abilities achieved in the workplace, in formal (further) education or informally. Engineering educational needs should be assessed on that basis individually and the PWQC be tailored accordingly. [D-2]*

The concern by the experts on this process is indeed more than justified given that such a process would inevitably lead to possible subjective inconsistencies and is foreseen to be highly difficult to achieve given that industrial experience cannot provide a replacement for formal academic courses to close the gaps in the fundamental theoretical engineering principles identified. In this context, we believe that emphasis should be made on formal education provided the gaps are of an academic nature.

- 3) *The mentoring staff for the graduates has to be appointed and its function in guiding and supervising the learning progress has to be transparently communicated (for instance on a PWQC-specific website or in a respective brochure). [D-3]*

The CoE completely agrees with this requirement.

- 4) *MCAST must ensure through appropriate means that the graduates are given the time and resources at the workplace to implement the mandatory engineering project. [D-3]*

The experts here make reference to the mandated “engineering project”. The CoE agrees in full to the requirement of the project. Moreover the project is recommended to consist of an objectively proposed 20 to 30 credits in order to ensure that the foundational knowledge given in the taught 30 ECTS modules (that have to be changed from the current MCAST proposal) is supplemented by a project where such knowledge gained can be demonstrated through a project of sufficient breadth (hence the proposal of 20-30 ECTS credits). Therefore, the CoE is requesting that the course should be made up of 30 ECTS of foundational engineering units, (which is still to be redesigned by MCAST) and supplemented by a 30 ECTS engineering project. This would most certainly lead to an important leap of quality from the initial MCAST proposal.

- 5) *The regulatory framework for the engineering project (“engineering task”) has to be diligently and bindingly defined and made accessible to the relevant stakeholders. [D-4]*

All stakeholders, including the CoE, should be able to participate in assessing the quality of the engineering project being proposed. Additionally, the members of this stakeholder group should include members proposed by the relevant stakeholder to avoid situations where MCAST appoints members of the CoE who are in some way involved in the engineering project, potentially leading to conflict of interests.



- 6) *The applicability of the general QA policies and regulations of MCAST to the PWQC has to be clarified and transparently communicated. The same applies to all course relevant rules, which are supposed to be governed through general programme provisions. [D-7]*

All relevant details of the PWQC should be open to the general public in a transparent manner to promote the transparency of the programme and the institution concerned.

## The Recommendations

The CoE is presenting its position (captioned in box) on the recommendations as possible suggestions for quality development (*italics*) listed hereunder as quoted from the report<sup>1</sup>:

- 1) *It is recommended to communicate more transparently how graduates/applicants will be supervised and guided in their course work, in particular during the periods of self structured learning (self-study periods), for instance on a PWQC-specific website. [D-3]*

The CoE notes that once again the expert panel underlines the importance of transparency which resonates perfectly with the CoE's recommendation.

- 2) *It is recommended to reconsider the unit assessment methods with a view to its intended learning outcomes and more often make use of oral examinations on a regular basis where appropriate. [D-4]*

The CoE agrees with this recommendation however recommends more emphasis on written examinations.

- 3) *It is recommended to appoint at least one chartered engineer as a member of the board of professional engineers and academics assessing the PWQC project work and paper. [D-4]*

The CoE agrees in principle with this recommendation keeping in mind that the local recognised professional is the Warranted Engineer. The warranted engineer being proposed should be a member representing the Chamber of Engineers and chosen by the Chamber of Engineers.

- 4) *It is recommended to establish a supportive learning environment for the students/applicants of the PWQC, in particular using appropriate electronic platforms for networking and the build-up of learner groups. [D-5]*

The CoE agrees with this recommendation.

## The Guiding Principles of the Assessment

The CoE is presenting its position (captioned in box) on the guiding principles which were adopted by the ASIIN Consult during their evaluation of the PWQC (*italics*). The Consult's *guiding principles* listed hereunder as quoted from the report<sup>1</sup>:



1. *The PWQC was supposed to achieve only one core aim for a limited number of graduates of former MCAST Bachelor (hons) engineering programmes. It is assumed that these graduates have at least some fundamental engineering knowledge shortcomings when completing their studies at MCAST. These knowledge gaps have been identified in a preceding evaluation (2016) and they shall be addressed through the PWQC.*

This is a fundamental underlying principle of this entire review process and therefore the Chamber shares this principle and as recommended in our position paper<sup>1</sup> “the course needs to clearly bridge the identified deficiencies in core theoretical and practical engineering competencies”.

2. *The design of the course and the content is thus expected to address this issue visibly. However, the present course is obviously not aimed at filling any knowledge gap, but rather to enlarging the students’ abilities to conduct (applied) research.*

The CoE agrees that “there should be a clear distinction and understanding between the high-level engineering project recommended and the make-up modules to address the specific deficiencies” as previously recommended

3. *While this is in itself a valuable objective for a CPD course for engineering graduates in further developing the competences either after completing their studies or while working in a professional engineering field, it evidently does not serve the purpose of the PWQC, namely further qualifying the graduates for the Warrant procedure. Consequently, the present course is somehow up in the air, losing sight of the focal aim.*

This statement equates the CoE’s face-value assessment of the PWQC being unjustly marketed as a CPD course, when in truth its purpose is to bridge the identified gaps in engineering competence.

4. *The first step serving that aim should be acknowledging that graduates of the former Bachelor (hons) programmes are lacking to a certain degree engineering competence in those areas identified during the 2016 evaluation. This idea has unfortunately been foreclosed by MCAST programme managers with reference to the positive feedback of both graduates and the companies employing them as engineers.*

Once again this guiding principle underlines the needs highlighted from the previous evaluation and worryingly notes that MCAST have turned down the validity of these observations. The CoE values the evaluation of ASIIN e.V. as reflecting the reality of the course and therefore believes that the fact that PWQC needs to meet the evaluation outcomes is not debatable or subject for discussion.

5. *While the achievements of MCAST graduates of the considered programmes, who have been attending the online audit of the PWQC, are indeed remarkable and provide to a certain degree evidence of the overall high quality of engineering education at MCAST, the relatively small reference group does not represent the totality of the relevant cohorts of graduates. Apart from that, it must be kept in mind that the preceding evaluation addresses the knowledge gaps related to the curricula as they were at the time. It thus explicitly included the possibility and even*

<sup>1</sup> Position paper: “Evaluation of the MCAST Pre-Warrant Qualification Course” by the (Maltese) Chamber of Engineers, as of 23 April 2020.



*probability of further training and learning of graduates (formal, informal, and non-formal) at the workplace or elsewhere after the completion of studies.*

The CoE appreciates the expert panel's comment. The reference group should have been taken from a random sample rather than selected graduates to make it more representative of the cohort of students entitled for the pre-warrant qualifications course.

- 6. Otherwise, MCAST has replaced the "old" Bachelor (hons) engineering programmes through "new" ones, which apparently encompass significant curricular changes in order to deepen the engineering fundamentals and related transferal skills. In doing so, MCAST intentionally concedes to the foregoing external QA assessment through scaling up the fundamental engineering knowledge and skills of students.*

The CoE agrees. This observation is contradicting the approach taken and course content proposed through the PWQC, whereby the concession to bridge fundamental competences is not explicitly made.

- 7. Although reserving the final assessment of these "new" curricula to the next step of the evaluation assignment, they nevertheless set a "natural" benchmark for the ultimate qualification profile of the MCAST engineering graduates. This benchmark could serve as point of departure for a stocktaking of the level of engineering competences of applicants for the PWQC (including the learning progress since completing the respective engineering programme). Recognition of prior learning as well as specification of engineering courses to complete the indispensable engineering knowledge basis could build on that.*

Further rationale on this observation is being argued under point 8 below.

- 8. A pre-set catalogue of mandatory and eligible engineering units might be the resulting framework of the PWQC, within which the individual competence level and learning progression of students could be identified. Following this approach would mean that not all students would have to study all units. Whatever the resulting individual schedule, the units would have to be completed along with an engineering project of adequate complexity (level 6 MQF/EQF).*

The CoE is concerned that the approach could lead to severe inconsistencies on addressing the knowledge skills gap to be address by fundamental study units. Experience in the local industry, and the associated on-the-job skills obtained are not equivalent to the foundational knowledge that has been emphasised as missing through the previous ASIIN evaluation report.

- 9. Principally, the whole PWQC shall be bearable for a mostly employed target group and of reasonable length. The volume and duration of the actual PWQC (30 ECTS / 1 semester) appears to be acceptable in that sense.*

While on appearance 30ECTS might seem sufficient, such number of ECTS in terms of study units, without a full-fledged engineering project of possibly an equal amount of ECTS, cannot go ignored by MCAST. Therefore, the PWQC should be re-designed.



10. However, apart from the size and length the PWQC in its actual form lacks every incidence of the outlined fundamental principles as it negates its basic assumption of a knowledge-and-skills gap from the onset. Consequently, it cannot be considered adequate to lay the foundation for the Warrant application procedure.

The CoE appreciates this is a fundamental reason why NEW bridging study units needs to be designed. The key highlight here is that the PWQC cannot be considered adequate to lay the foundation for the Warrant application procedure. This CoE is taking this assessment from the ASIIN CConsult on a very serious note.

11. Any alternative approach MCAST might choose to adapt must not dispense with this pre-requisite consideration, which needs to be the starting point of any viable solution.

The expert opinion here is categorical that MCAST is expected to abide with the pre-requisites and requirements laid out in the evaluation report prior to reaching a viable solution.

## Summary

The evaluation report on the PWQC has been evaluated by the CoE as stakeholder notwithstanding the limited amount of time allocated. The CoE continues to commit itself to ensure that the review process is fit for purpose. On a general note, the CoE welcomes the expert panel's assessment which takes into account the recommendations set forward by the internal evaluation carried out by our organisation. The main conclusions that the CoE draws from the evaluation report of the proposed PWQC are summarised as follows:

- The PWQC is obviously not aimed at filling any knowledge gap, but rather to enlarging the students' abilities to conduct (applied) research.
- MCAST does not acknowledge that graduates of their former B.Eng. programmes are lacking in engineering competencies to a certain degree.
- The PWQC negates its basic assumption of a knowledge and-skills gap from the onset and cannot be considered adequate to lay the foundation for the Warrant application procedure
- MCAST should address the reservations in a reasonable amount of time where the peers will review the course documentation with a follow-up visit to audit the course results.

The CoE further observes the following to ensure that a viable solution is reached:

- Informal Learning and industry experience are positive contributors to an engineering career however these should not replace the academic engineering competence gaps which have been identified.
- The report makes it clear that ASIIN e.V. have not reviewed the "new" B.Eng(Hons.) course programmes whilst simultaneously these are being proposed as a potential "benchmark". Any units from the "new" course to be adopted for the PQWC are to be subjected to a quality assurance review.
- Eligibility for the Engineering Profession Warrant in Malta requires academic qualifications together with a minimum of 2 years work experience and practical engineering training. These two components are separate and complementary, and one does not compensate the other. Therefore, work experience should not compensate for lacking academic skills of the



graduates. Although the workplace is typically fulfilling and rewarding in an engineering career, it is highly unlikely to bridge any gaps of an academic nature. The Engineering Project is recommended to consist of an objectively proposed 30 ECTS.

- The PWQC is to be re-designed in such a way that the course convincingly addresses the recommendations from the previous quality assurance review to ensure that any previously identified gaps are covered.

The CoE remains committed towards public health and safety by ensuring that Warranted Engineers have the necessary academic training and experience and therefore will not bargain on the level of academic qualifications necessary to qualify one for the Warrant. Thus, it will remain active in its role in this review process.

-