

UNIVERSITY OF ULSTER

REPORT OF A MEETING OF THE REVALIDATION PANEL: 4D CIVIL AND ENVIRONMENTAL ENGINEERING (SOUTH WEST COLLEGE)

18 November 2019

PANEL:

Professor U McMahon-Beattie, Head of Department of Hospitality and Tourism Management, University of Ulster (Chair)

Professor N Hewitt, Head of Belfast School of Architecture and the Built Environment, University of Ulster

Dr P Brogan, Lecturer, School of Communication and Media, University of Ulster

Ms L McCrory, Student Representative, South West College

Dr S Ali, Lecturer in Civil Engineering, University of the West of England

Mr D Worthington, Lecturer and Programme Manager for Civil Engineering and Construction provision, University Centre South Devon, University of Plymouth

REVALIDATION UNIT CO-ORDINATOR:

Dr D McKelvey, Deputy Head of School of Natural and Built Environment, South West College

IN ATTENDANCE:

Dr M Keenan, Associate Dean (Education), Faculty of Computing, Engineering and the Built Environment, University of Ulster

Mrs M Paris, Faculty Partnership Manager, University of Ulster

Mr B McArthur, Academic Policy and Standards Officer, University of Ulster

1 INTRODUCTION

The Panel met to consider the following provision within Revalidation Unit 4D Civil and Environmental Engineering (South West College).

FdEng Civil and Environmental Engineering (with CertHE in Civil and Environmental Engineering exit award) (FT/PT) (Omagh campus)

The College proposal to change the title of the programme to 'Civil Engineering' was approved by the Panel. The Course team explained that the current title had been introduced at a time when it was considered important for both students and employers to be aware that the programme included aspects relating to environmental engineering. However, within the sector there was now a clear understanding that environmental considerations were inherent in all aspects of

civil engineering and it was therefore no longer necessary to make an explicit reference to environmental engineering in the programme title.

The Civil Engineering programme at South West College is long-established having been introduced in 2010. The programme aims to provide graduates to the local and regional civil engineering industry. The College has strong partnerships with local employers in both public and private sectors which was underpinned through the operation of an Industry Advisory Board whose membership includes representatives from both employment sectors and the relevant professional bodies.

The programme was currently approved for delivery in full-time and part-time (2 year / 3 semester (2Y3S)) modes on the Enniskillen and Omagh campuses. The revalidated programme would be offered on the Omagh campus only in full-time and part-time modes, the latter including a traditional 3-year programme plus a 2-year 'accelerated' version delivered over 2 years and 1 semester (7 semesters). The proposed modes of delivery, including the accelerated version, which is designed to replace the former 2Y3S programme, a mode of delivery which the University has phased out, is supported by the Faculty.

The programme is a traditional 240-credit point foundation degree incorporating a 40-credit point work-based learning module at level 5. A 20-credit point level 3 mathematics module is included, with six level 4 modules totalling 120 credits and four at level 5 totalling 100 credits. All modules are compulsory.

The current provision was professionally accredited by the Joint Board of Moderators (JBM).

In developing the programme, the Course Team took account of Ulster's curriculum design principles in terms of module sizes, number of module learning outcomes and assessments per module and the University's guide to assessment workload equivalencies.

Since 2015, the programme has been used as the educational component of a Higher Level Apprenticeship (HLA) Scheme with six HLA students in 2015 rising to 24 in 2019. The HLA students previously took the 2Y3S part-time programme and from September 2020, would take the new part-time accelerated programme.

The following are the projected maximum and minimum intake figures for the provision which are supported by the Faculty.

Year	2020/2021 Projected		2021/2022 Projected		2022/2023 Projected		2023/2024 Projected		2024/2025 Projected	
	Min.	Max.								
FT and PT combined	15	20	15	20	15	20	15	20	15	20
Accelerated PT	15	20	15	20	15	20	15	20	15	20

Articulation routes are available for graduates of the programme into Ulster’s BEng Hons Civil Engineering (FT/PT) or BSc Hons Civil Engineering (FT), both of which are delivered on the Jordanstown campus. The revalidation document stated, “There are high levels of progression to further study at Ulster University and other HEIs ... approximately 50% of HLA students’ progress to honours degree programmes”.

In summary, the main revisions to the revalidated programme include the proposed change to programme title, the introduction of the 3 year and the accelerated 2-year/1 semester part-time programmes, the introduction of four new modules and adjustment to the credit sizes of several current modules.

2 DOCUMENTATION

The Panel received the following documentation:

- Agenda and programme of the meeting
- Guidelines for evaluation and revalidation panels
- QAA benchmark statement for Engineering (2015)
- QAA Characteristics statement for Higher Education in Apprenticeships (2019)
- QAA Characteristics statement for Foundation Degrees (2015)
- External examiner reports for the last two years
- Preliminary comments from panel members
- Preliminary comments from the Faculty Partnership Manager
- Revalidation documentation

Two exemplar assessment rubrics were included in the revalidation document.

3 THE MEETING

The Panel met initially with the following senior management from the College before meeting with a group of current students, and finally with the course team.

- Dr Jill Cush – Deputy Chief Executive Officer
- Mr John Moss – Head of Faculty Built Environment, Creative and Life Sciences
- Mr Stephen Moss – Head of School Natural and Built Environment
- Mr Liam Curran - Centre for Excellence Manager – Higher Education

- Dr Danielle McKelvey – Deputy Head of School Natural and Built Environment
- Ms Elizabeth Shackels – Quality Assurance Manager
- Ms Noreen McGirr – HLA Coordinator
- Professor A Woodside, Industry Representative

Apart from where stated otherwise, the following report is a summary of responses to Panel questions provided by each of the groups that met with the Panel during the meeting.

4 MEETING WITH SENIOR MANAGEMENT TEAM

Introduction

Foundation degrees were the preferred intermediate qualification available within the College which currently offered a total of 21 such degrees. The revalidated programme fitted neatly with and complemented the College's other provision. Civil Engineering was regarded as a key priority within the College's strategic planning. The College had substantial links with the local civil engineering industry both in the private and public sectors as evidenced by the tremendous growth in the Higher Level Apprenticeship (HLA) over recent years which was now a very important part of the College offering.

Accelerated part-time programme / Higher Level Apprenticeship (HLA)

The Faculty Partnership Manager, Mrs Paris, for the benefit of the Panel, summarised the operation of the HLA in conjunction with the foundation degree including the necessity of agreed academic contact hours between the College, students and employers which was required to total a minimum of 20% of the total hours for the programme.

Within the College, the HLA had proved very successful. Both large and small employers were very supportive of the HLA. To date it had been run in conjunction with the part-time 2Y3S version of the foundation degree which was now being discontinued and instead, the proposed part-time accelerated programme would be utilised for this purpose (although the 2Y3S version would be the College's preferred mode). A blended approach would be employed in programme delivery mainly involving face-to-face teaching but supported by online access to course materials. At least 20% of a student's working week, 5 hours per module, would be timetabled.

A discussion followed regarding weekly contact hours for HLA students during which, the Associate Dean (Education), Dr Keenan, and the Faculty Partnership, Mrs Paris, explained the University position. Since students would attend the College on only one day per week over 12 weeks, the contact hours of 10 hours per day would result with breaks in a 12-hour day. The University would not

support this and countered that a more manageable approach would be to spread the hours across the full 15-week semester which would result in an 8-hour day (with additional breaks). Where there was an end of semester examination, 14 weeks would be used. While this compromise would not be perfect, the University would be willing to support this approach in the short term. Dr Keenan explained that the difficulty with the current HLA model was that the foundation degree had not been designed as the educational component of an HLA. Rather an HLA had been attached to the existing foundation degree thereby currently resulting in an imperfect fit between the two. The University was however considering the development of a framework for HLAs in foundation degrees.

Projected student intake figures

The Panel suggested that the upward trend in recruitment was not reflected in the projected student intake figures. It was explained that student numbers were capped. However, the anticipated student numbers were considered realistic and would allow for two good-sized classes, one full-time and one part-time.

Physical resources

In recognition of the need to maintain up-to-date laboratories, physical resources and staff training, the College strategic plan included an annual spend of just under £200K for staff development activities. In addition, reserve lecturers and technology associates employed in industry kept staff current in industry developments and projects. Regarding physical resources, as evidence of its belief in the strength of the civil engineering provision, the College spent £125,000 in capital investment in supporting this provision in the last year alone.

JBM requirements

In terms of the balance between assessment by coursework and examinations, JBM requirements were currently under review. The proposed provision met the current requirements but were they to change, the programme would be amended accordingly. The assessment strategy had been amended to include fewer formal examinations; instead having been replaced with class tests. This had not however led to any lessening in the academic rigour of the programme. One factor in this decision had been the difficulties encountered by employed part-time students securing time off during the examination period. It was suggested that this had not disadvantaged past graduates who had progressed to honours degree programmes where their record of achievement has been impressive.

5 MEETING WITH STUDENTS

The Panel met with a group of students from the existing provision including full-time, part-time and part-time students undertaking the HLA. The students were

generally complimentary of the provision highlighting several positive areas. Hereunder is a summary of their responses to the Panel's questions.

General

- Student input into developing the new programme had been sought from current students
- Formal tutorials were timetabled; one-to-one meetings available if requested
- For FT students, extracurricular sessions in academic skills were available; for PT students, ongoing support was available in class
- A great deal of information was available regarding progression to Ulster
- For PT students, where issues or concerns arise, communication with the academic tutor was always available via email
- Most students indicated their interest in progressing to an Honours degree

Placement

- Students were required to secure their own placement – College staff assist through their contacts in industry
- Never known a situation where a student had been unable to secure a placement
- Some students begin their placement during the summer semester – own choice
- Some employed part-time students had study leave agreed with employers in advance; pre-examination leave was at the discretion of the employer
- Ongoing communication between employer and academic tutor was maintained throughout the placement

2Y3S programme /HLA

- Demanding but time set aside during class to complete coursework assignments – helps given external pressures of work and home life
- Attend College on a Monday; work the rest of the week
- Day release runs from 9.00 am to 9.00 pm – 10.00 pm (although more often finishes before that, especially when students eschew evening break)
- Differing views on finishing time e.g. "never in to 10.00 pm", "never away later than 8.00 pm", normally finish between 6.30 pm and 7.00 pm"
- Quality of lecturers ensure engagement throughout the long day helps maintain concentration
- Usually work in same area as currently studying
- Assessment comprises supervisor's report, student report and interview
- Employers very supportive on site – some colleagues were graduates of the programme who understand the pressures of work and study
- Overall, lot of effort required but HLA was "a fantastic option"

6 MEETING WITH REVALIDATION TEAM

'Accelerated' part-time programme

In recognition of the demands of the accelerated programme, as well as consideration of their qualifications, all applicants would be interviewed as to their suitability to undertake the course. The challenges they would face in completing the shortened version of the part-time course alongside competing demands of work and home life would be made clear to applicants. Where appropriate, as had happened in the past, applicants would be counselled towards a less demanding mode. There were benefits to having a small student cohort in such a demanding programme. Students would be well supported throughout and the spread of the course across three semesters would be a decided advantage. The record of achievement of past HLA students was "good".

The entry requirements for the accelerated programme were the same as those for the other modes. While the entry requirements for the current 2Y3S mode were higher, it was decided that the same entry requirements across the provision would be appropriate given the duration of new accelerated programme would be closer to that of the normal part-time course.

Work-based Learning (WBL)

Applicants with disabilities would be identified at the outset of the of the application process. Where appropriate, reasonable adjustments would be made to support the student through the programme. A good range of suitable placement sites would be available.

All foundation degree students who do not already hold one will be given the opportunity to receive training for the award of the CSR card¹ which enables access to construction sites. While the College would cover training costs, students would be required to pay for the card itself. Students must hold the card prior to going on placement.

Assessment and Marking

In determining the balance of assessment between coursework and examination, it had been decided that the level 5 modules should have a higher weighting in examinations. This would help reinforce the "idea" of progression from one level to the next. While in some modules formal examinations had been replaced with class tests, this was not considered to detrimentally affect the rigour of the assessment strategy overall.

¹ The Construction Skills Register (CSR) is a register of construction workers who have completed the industry approved CSR health and safety training course and assessment.

To ensure marking consistency, a detailed marking scheme would be used for each assessment component in each module. A marking scheme would also be provided to moderators and the external examiner. For marking competencies, a marking “template” would be employed.

Previously, marks for competency-based assessments had been very high and it had therefore been difficult to ensure consistency in marking across placement sites. Consequently, it had been decided to mark competency-based assessments on a pass/fail basis. Assessment would be carried out by the academic supervisor in conjunction with the industry supervisor and taking account of other supporting evidence such as the student’s journal/diary entries, observation of student at work, and discussions between the student and their employer. The type of competencies assessed would include problem solving, decision making, forward planning, use of technology, reliability and timekeeping. Students would meet these types of competencies, including professional ethics, in various modules before going on placement so they would know what to expect. In addition, students would be provided with a briefing file containing information regarding many aspects of working in industry, for example, indemnity insurance, what should be recorded in their placement journal and advice in recording personal reflections. Although the competency-based assessments would be assessed on a pass/fail basis, students would receive a percentage mark for the other academic components of assessment in the WBL module namely, a written report and an interview/presentation.

All students would be enrolled as members of the Institution of Civil Engineers (ICE). This was considered a very important step in their career progression. An ICE representative would be invited to speak to students regarding the benefits of their membership.

Currently, there were 22 employers represented in the College’s Industrial Advisory Board. The civil engineering provision in the College attracted students from all over Northern Ireland and to date, 100% of graduates were in employment.

Modules

There were no optional modules in the programme since the course would cover core engineering principles and provide students with a broad overview of civil engineering. There would however be opportunities within modules for some optionality, for example, in the civil engineering project module, where students would be able to choose their own area of study.

Given its importance in civil engineering projects in terms of time, deliverables and budget, external panel member, Dr Ali, lamented the absence of any reference in the course content to the construction of steam curing chambers or

consideration of the placement of civil engineering students in factories which were using steam curing. The Course Team stated that they would consider including this aspect in the future.

In module, *2D AND 3D CAD for Civil Engineers*, students would learn how to use BIM and Revit software. Also covered would be the use of suitable graphical communication methods utilising initially, the 2D model, and then moving onto the 3D model. Given its importance, enough time would be given over to 3D modelling which was one of the reasons that the module would be delivered over two semesters with CAD covered in semester 1 and BIM in semester 2. The Panel suggested that this should be made clearer in the module description.

7 CONCLUSIONS

The Panel commended the Revalidation Team on the following:

- Student outcomes, reviews and external examiner reports demonstrate evidence of a well-managed programme for which the course team should be commended.
- Sound technical and professional basis for the programme, JBM accreditation, and linked to this, evidence of positive engagement with industry partners.
- Breadth and depth of experience, and academic and professional qualifications within the delivery team, evidencing academic and industry excellence promoting sound research and practice-based teaching and learning.
- College Digital Learning Academy promoting development of students' study skills, personal development etc. which recognises the breadth of the learning experience.
- Investment in laboratories and technical equipment supporting currency and delivery, improved employability and the student learning experience.
- High levels of student satisfaction.

The Panel agreed to recommend to the Academic Standards and Quality Enhancement Committee that the provision within Revalidation Unit 4D Civil and Environmental Engineering be approved for a period of five years (intakes 2020/21 to 2024/25 inclusive) for the minimum and maximum student intake figures detailed in Section 1 above, subject to the conditions and recommendations of the Panel being met, and a satisfactory response and a revised submission being submitted to the Academic Office by 13 January 2010 for approval by the Chair of the Panel.

Conditions

All programmes

- 1) Those issues identified in the appendix to the panel report to be addressed in the revised document.
- 2) Include a written examination as part of the assessment strategy in module, *Mathematics and Structures*.

Accelerated, part-time, programme

- 3) Include confirmation in the revised document of the use of the full 15-week semester for delivery of the programme, including assessments, through the inclusion of a table containing timetabled contact hours and assessment submissions across each semester of the programme.
- 4) Include confirmation in the revised document of the wording to be used in the tripartite agreement signed by the College, student and employer, evidencing that the student shall receive at least 20% of 'off-the-job' learning.

Recommendations

- 1) Keep under review the JBM requirements in relation to module assessment weightings between examination and coursework.
- 2) In module, *Civil Engineering Project and Professional Development*, consider inclusion of a group assessment.
- 3) In module, *Civil Engineering Project and Professional Development*, in the 'presentation' assessment, consider including PSRB representation in the 'selected audience'.
- 4) In module, *2D AND 3D CAD for Civil Engineers*, ensure that sufficient practice is included in relation to 3D modelling and use of BIM software.
- 5) Consider inclusion of steam curing within the programme content in the appropriate module.

8 APPRECIATION

The Chair thanked the Panel members and, in particular, the external subject experts, for their valuable contribution to the revalidation process.