ULSTER UNIVERSITY

REPORT OF A MEETING OF THE REVALIDATION PANEL UNIT 16G4: COMPUTING (NWRC)

26 March 2019


PANEL:

Dr Tom Maguire, Head of School of Arts and Humanities, Ulster University (Chair)
Dr Syed Naqvi, Senior Lecturer/Programme Leader, School of Computing and Digital Technology, Birmingham City University
Dr Lindsay Forsyth Marshall, Senior Lecturer, School of Computing, Newcastle University
Dr Michaela Black, Head of School of Computing and Engineering, Ulster University
Dr Laura Bradley McCauley, Associate Head of Department of Global Business and Enterprise, Ulster University
Mr Caolan Maxwell, Student representative, North West Regional College

REVALIDATION UNIT CO-ORDINATOR:

Mr Peter Wisener, Curriculum Manager for Computing, North West Regional College

IN ATTENDANCE:

Mrs A Guarino, Academic Policy and Standards Officer, Academic Office, Ulster University
Mrs Maeve Paris, Faculty Partnership Manager, Faculty of Computing, Engineering and the Built Environment, Ulster University


1    INTRODUCTION/BACKGROUND

The Panel was convened to consider the following provision:

- FdSc Information Technologies (with CertHE exit award) (FT/PT)
- FdSc Software Development (with CertHE exit award) (FT/PT)

The above programmes are level 5 awards comprising of six compulsory level 4 modules (20 credit points each), four compulsory level 5 modules, (20 credit points each) and a compulsory 40 credit point work-based learning module. Both programmes will be offered in full-time mode over two academic years and part-time mode over three academic years. A CertHE exit award is available for those exiting after successfully completing the six level 4 modules.

Graduates of the Foundation provision would be eligible to be considered to progress to the following Ulster University courses:
- BSc Hons Computer Science FT
- BSc Hons Information Technologies FT
- BSc Hons Information Technologies PT

2    DOCUMENTATION

The Panel received the following documentation:

- Agenda and programme of the meeting;
- Guidelines for Revalidation Panels;
- QAA subject benchmark statement for Computing, February 2016;
- QAA Characteristics Statement, Foundation Degree, September 2015;
- Statement from the Faculty Partnership Manager;
- Preliminary comments from panel members; and
- Course submission.

3    MEETING WITH SENIOR MANAGEMENT TEAM

3.1    Stakeholders' Engagement

The Panel asked the senior team to identify the stakeholders who contributed to the design of the provision. The senior team mentioned they had consulted industry, both small local employers and larger multinational companies such as Fujitsu and Allstate. Students were also consulted during the revalidation process, as well as a number of the Colleges' course teams involved in the delivery of similar IT provisions.

3.2    Differentiation Between the Programmes

The Panel asked for clarification on the distinguishable marketing points of difference between the two courses. The senior team replied that the design of the two courses was guided by the QAA benchmark. The senior team added that particular cognisance was given to ensure that both programmes cover the same level 4 content as their respective articulation routes.

3.3    Recruitment

The senior team explained that a combination of the demographic downturn in recent years, the rising numbers of local students aspiring to go study in England, and the recent trend of unconditional offers from England, contributed to the reduction in recruitment numbers experienced in recent years.

The senior team assured the Panel that there was a plan in place to address this issue. The College would promote the provision among their large number of level 3 students, with whom the array of potential local jobs and financial benefits would be highlighted. The team would also continue their efforts to grow the numbers of the Higher Level Apprenticeships (HLA) as well as promote the provision with local schools, raising awareness of the opportunities and benefits which a foundation degree would offer.

3.4    Attrition and Student Support

The Panel queried the provision's high levels of attrition. The senior team explained that the majority of students leaving the programme were first year students who mainly chose to leave because of personal circumstances and work-related constraints. In cases where students felt the programme was not suitable for them, alternative paths were offered.

The senior team described the steps that were taken to address the high attrition rates. As the senior team believed over-assessment was one of the reasons for the high attrition, they reviewed and adapted the programmes in line with Ulster University's curriculum design principles. This included removing all the 10 credit-point modules, which included 2 coursework assessment items as well as an exam, and devising a new, more balanced, assessment strategy. To address the struggle some students had experienced with mathematics, 60 hours of mathematics support classes were offered alongside the programme. These were offered as drop-in sessions students could utilise as needed. The team discussed specific examples of students who have benefited from these classes, which helped them pass modules they had previously failed.

On a strategic level, an attrition working group was created to devise a plan for intervention and support for at-risk students, to allow for intervention with special tailored support allocated on an individual basis.

3.5    Induction

The Panel asked the senior team to outline how induction would be delivered. The senior team assured the Panel that although the initial induction was delivered at the beginning of the course, short inductions were delivered throughout the provision, as well as an additional induction in the beginning of year 2, as an introduction to level 5. In addition, class representatives benefited from further inductions throughout the year.

The senior team explained that the induction was not just delivered by the course team who covered a range of concepts and skills required to successfully advance in the programme, but that student services were also involved.

3.6    Work-based Learning

The Panel asked the senior team to describe how the work-based element of the provision would be managed and how it sits with the overall College strategy. The senior team explained that the HLA and the placement offered to students was a distinct offering of the provision. The team added that HLA comprised a significant part of the part-time cohort, amounting to 11 out of the current 24 students. The Panel was assured that the HLA students would take on a new, programming related, role within their respective organisations, as this was agreed with their organisations prior to the beginning of the course. Placements abroad were also available to students due to a successful Erasmus Pro Application, which would enable up to 30 three-month placements over 2 years outside of the UK, including current opportunities in Ireland and Germany.

The senior team explained that the students were provided with support from the initial stages of preparation for placement as well as assistance in securing placement. The Work-based Learning module would be taken in semester 2 of year 2 in the full-time programme. However, preparation would already begin in semester 1 of year 2, at which time students would secure their own placement, supported by their placement tutor as required. Students would be supported throughout their placements by personal contact and on-line assistance. During the placement, site visits would be conducted by the placement tutor, and students would be required to complete a weekly log as well as participate in an interim presentation.

In response to the Panel's query, the team explained that although they encouraged employers to provide paid placement, only some did, adding that many did provide

reimbursement for expenses. The possibility of unpaid placement was communicated to the students from the outset. The team added that this has yet to pose an issue as students were aware of the many benefits gained from placement and the various opportunities it provides. A hardship fund was available for students who struggled due to securing an unpaid placement.

The senior team advised the Panel that an Employer Engagement Officer was recently appointed to oversee all the work-based aspects of the provision.

The Panel noted 100% uptake of the placement, as unplaced students, or those unable to complete their placement, were supported by the College's Business Support Centre and academic staff in finding and completing a programming related project within the College.

### 3.7 Internationalisation

In response to the Panel's query, the team explained that provision offered various opportunities for student mobility facilitated by the recently secured Erasmus Pro grant. Internationalisation was also enhanced by the College's close links with many multinational companies, offering placement opportunities to students. The team added that following their placement, many of their graduates had secured jobs within these international companies.

In response to the Panel's query regarding an international dimension in the curricula, the team explained that much of the curricula was of a global nature and that internationalism was embedded within the modular content which introduced both UK and international standards and practices.

The Panel suggested that the team state explicitly in the course document how internationalisation would be articulated through specific modules and the programme as a whole.


## 4 MEETING WITH STUDENTS

The Panel met with a group of eight students from different year groups across a range of the provision, two of whom were funded through the HLA programme.

The Chair welcomed the students noting that they are an important part of the quality assurance process, helping in assessing the quality of their experiences and to identify areas where improvement can be made.

### 4.1 Induction

All students were very positive when asked about the first-year induction, mentioning both the content which was covered and the social benefits of getting acquainted with others in their cohort. The Panel noted that induction was staged across both years as a way of reinforcing the relevant content at each stage. Some of the students felt there might be room for an induction week for the part-time provision to be delivered a week before the beginning of the programme.

## 4.2 Group Work

The students reported no issues relating to group work, explaining that they felt working with others was extremely beneficial as it prepared them for similar circumstances in future work-place environment. The students felt that the marks they received were fair, and mentioned that when any problems arose, such as uneven contribution of members within the group, these were raised and promptly dealt with by the lecturers.

## 4.3 Work-based Learning

The students felt the placement was extremely beneficial, enhancing various skills such as leadership and team-work. The students reported no issues relating to placement and felt that there was ample support in place throughout the whole process. In regard to securing placement, although the responsibility laid with the students, they felt that there were plenty of placement opportunities available and that potential placement opportunities were well communicated.

The students outlined support received in preparation for placement such as the Personal and Professional Development module, in which CV building was covered. The students did not have clarity on the official structure of support the College had in place for placement but did mention specific staff members they could approach for guidance and assistance.

The Panel noted that the students did not receive any guidance in relation to building a portfolio to showcase their programming achievements as an evidence base for future employers.

The HLA students explained to the Panel that prior to the commencement of the programme, the College specified to their employers the requirements of the provision, which included a new defined role with a specific project which needed to be delivered.

## 4.4 Attrition

The students were of the opinion that although some of the students leaving the programme were first year students who mainly chose to leave because of personal circumstances, many left as they felt the programme's content, or its demands, did not suit them. The students suggested expectation management at an earlier stage, such as open days, could address these issues.

## 4.5 Reasons for Choosing the Programme

The course had been chosen for a number of reasons including the good reputation of the course, a desire to change career paths, and progression from a level 3 course at the College. One student mentioned choosing the FdSc Information Technologies over the FdSc Software development owing to its broader approach.

## 4.6 Transition to Higher Education

The vast majority of students aspired to find employment after graduation with only two mentioning plans to continue their education. All felt they were well prepared for transition to HE, mentioning relevant skills they had acquired throughout their course. This was exemplified by the scaffolding manner in which independent study skills were developed.

The Panel thanked the students for their engagement and wished them well in their studies and future career.

5  MEETING WITH THE COURSE TEAM

5.1    Induction

The team reaffirmed the senior team's commitment to short inductions being delivered throughout the course in addition to the main induction in year 1. By way of example, the team described weekly tutorials that would be offered to students, the $2^{nd}$ year placement induction, and short periodical inductions which would cover such topics as the appeals procedure.

5.2    Cohort Identity

The Panel was advised that the part-time and full-time students would be taught separately, clarifying that the part-time students and the HLA's would be taught together. The Panel noted that if numbers would decline significantly, both modes might merge. The team assured the Panel that cohort identity and cohesion would be cultivated with students on both modes coming together for consultation meetings and various talks offered by the College. In addition, full-time students were offered the opportunity to attend part-time classes when additional support was required.

5.3    Industry-Informed Curriculum

The Panel was informed that the decision to teach web technologies over mobile application development was informed by industry needs, as currently no apprentices were available for mobile application development. The Panel was assured that the team had the skills and expertise to deliver mobile application development content and would be responsive to any development and demand in the local market.

5.4    Learning Resources

The team acknowledged the Panel's view that some modules lacked consistency between the content and the learning resources, and would benefit from a broader, concept-based reading list. The Panel recommended the team consider revising the reading lists of Programming I module to include a book about generic programming principles and structure, and Programming II to include a book about UML.

5.5    Staff Development and Currency of Provision

Continuing Professional Development (CPD) as well as close links with industry were mentioned as ways to ensure the currency of the provision going forward. The team assured the Panel that all staff engaged in relevant staff development activities, keeping them up-to-date with the latest developments in the field and in turn enhancing the student experience and the quality of teaching and learning. The Panel noted that appraisal was conducted every 2 years in addition to periodical reviews. Higher Education Academy (HEA) fellowship was encouraged but not compulsory for staff.

The team described the comprehensive and varied staff development opportunities on offer, listing specific examples such as: Staff Development programmes within the College; Ulster

University Staff Development Events (including CHERP modules); and Staff undertaking HEA accreditation.

## 5.6 Assessment Strategy

In response to the Panel's query, the team explained that in revising their assessment strategy they have taken cognisance of Ulster University's curriculum design principles. The team explained that they came together and reviewed individual modules to ensure an overall balanced assessment load, the progressive scaffolding nature of the overall assessment, and a move away from examinations to a more creative and subject appropriate assessment types, such as small exercises and practicals. The team added that these practical exercises would also become the base for the students' future employability portfolio.

## 5.7 Employability and Employer Engagement Module

The Panel queried the rationale for removing the Employer Engagement module from the provision. The team explained that although the module had been removed, the content would be embedded in other modules, specifically the Work-based Learning module.

The Panel was concerned that students would not have the opportunity to reflect on the skills they were developing throughout the programme. The Panel also informed the team that students were not aware of the immense value of collating their practicals into an employability portfolio, suggesting this should be articulated to the students during induction.

## 5.8 Academic Integrity

The Panel queried how the team would ensure academic integrity with the move away from exam-based assessment towards coursework. The team explained that academic integrity was taken into consideration when devising the new assessment strategy, explaining that assessment of supervised class-based activities minimised the risk of plagiarism. Furthermore, the team added that, as per College policy, *Turnitin* would also be used to prevent plagiarism.

## 5.9 Assessment of Group Work

The Panel queried the strategy relating to group assessment, explaining that, in accordance with Ulster University's policy on group work, in modules which contribute to an award classification, normally at least 25% of each student's assessment should be based on his or her individual contribution. The team assured the Panel they had devised an assessment procedure to ensure individual work would be marked separately, giving the example of Programming III module, in which each member of the group would be responsible for an individual area of design. The team added that peer assessment would not be included in the mark scheme.

The Panel was of the view that, although difficult to assess, group work was a valuable employability skill which should be developed. The Panel suggested the team consider incorporating group work in level 4 modules as to not affect the overall grade.

5.10    Transition to Higher Education

The Panel informed the team that the students felt supported and well prepared for transition to HE and queried if there was a formal structure in place to facilitate this support. The team mentioned the Study advisor, which was timetabled on a weekly basis. The team also informed the Panel that the articulation routes to Ulster University programmes were promoted from the outset and that students were encouraged to participate in the University's open days. The Panel suggested exploring the possibility of collaboration between the College and the School of Computing, Engineering and intelligent Systems, to further familiarise potential students with their progression opportunities.

5.11    Student Attrition

Attrition rates were revisited by the Panel, to which the team responded that personal circumstances and work-related issues were the most common reasons for leaving the programme. Another reason provided by the team was un-suitability of the programme and the desire to pursue a different path. The team added that, in some cases, students had returned, at a later stage, to either complete their degree or to study an alternative one. The Panel noted that there were currently 186 students studying at level 3 (year 1 and 2 combined), with whom the provision would be promoted.

5.12    Personal and Professional Development Module

In response to a question from the Panel, the team explained that the 10 credit point Personal and Professional Development module had regretfully been removed from the provision when redesigning the provision, in attempt to align with Ulster University's new curriculum design principles. The Panel was assured that professionalism and ethics were fully embedded within the curricula in various modules. The Panel was of the opinion that this had not been articulated within the document and requested the team explicitly outline the ways in which professionalism and ethics would be embedded in the module content and the programme as a whole

5.13    Internationalism

In response to a query from the Panel, the team outlined the way internationalism would be embedded within the provision, assuring the Panel that the content would be mapped to international qualification framework, ensuring a balance between local and international standards and practices. International and cultural awareness would be communicated to the students within the modular content, by the use of worldwide examples and case studies, and the understanding that legal and ethical aspects differ around the world. Transferable skills acquired by students throughout the provision would further enhance students' employability both locally and abroad.

The team mentioned global mobility opportunities linked with the College's international industry links, and the placement opportunities available to students in Germany and Ireland. In addition, students would be given the opportunity to acquire external international certifications.

5.14    Resources

In response to a question from the Panel, the team advised that the reading list was carefully designed to include both items which matched closely the course content, as well as ones offering guidelines and exercises.

The Panel felt the reading list for Data Analytics module was overly focused on the use of Python language and recommended the team include material to cover the principles of data analytics. The Panel also suggested the team include a required reading book for the Database Systems module.

5.15    Modules

The Panel discussed the content of the various modules with the team.

Web Technologies

The team acknowledged that some of the material listed in the module content description would not be directly taught, but instead could be learned during independent study. The Panel recommended the team revise the content list to accurately articulate what content would be actively taught.

Risks and Cybersecurity

In response to the Panel's query, the team explained that although technical risks would not be included in the Risks and Cybersecurity module, it would be included in the Testing module. The Panel advised that the link between these modules be articulated in the course document and to students.

Testing

The Panel recommended the module title be changed to Software Testing.

Networking and Architecture

The Panel recommended the module title be changed to Computer and Network Architecture.

Data Analytics

The Panel questioned the module's level suitability in respect of both the content and learning outcomes, suggesting it was set at postgraduate level. The Panel recommended the module be revised to reflect a level 5 module. The Panel also recommended the module title be changed to Data Science.

5.16    Work-based Learning

The Panel asked the senior team to outline the structure of the Work-based Learning module and elaborate on how they ensure the module learning outcomes would be achieved. The team advised the Panel that students were provided with support from the initial stages of preparation for placement, including assistance from the module leader in ensuring their proposed placement project would enable them to meet the module learning outcomes. In

addition to the placement project, students would be required to submit a weekly reflective log. Guidance and feedback would be provided in the initial stages to improve students' understanding of how to fully benefit from the logs. A 10 minutes interim presentation would also contribute to this monitoring process. Regular site visits as well as in person and on-line support would further ensure the placement remains valuable and does not shift towards a more menial role. The Panel noted that unplaced students would be provided with appropriate placement opportunities within the College.

## 6    CONCLUSIONS

The Panel commended the team on the following aspects evident from the revalidation:

- The programmes are clearly articulated and presented and provide valuable pathways into Higher Education.
- The content of the curricula is current and relevant.
- There is evidence of a coherent and consistent approach to course design.
- The integration of academic and student support staff provides a clearly structured and coordinated approach to pastoral care.
- There is evidence of an effective assessment strategy that provides opportunities for students to demonstrate the level of their learning across a range of assessment types.
- Work-based learning provides a strong under-pinning to student employability.
- There is evidence of a strong engagement with local employers and of international opportunities through the Erasmus Pro programme.

The Panel agreed to recommend to the Academic Standards and Quality Enhancement Committee that the programme be approved for a period of five years (intakes 2019/20 to 2023/24 inclusive) subject to the conditions and recommendations of the Panel being addressed and a satisfactory response and a revised submission being forwarded to the Academic Office by 14 May 2019 for approval by the Chair of the Panel.

Conditions

i)   That matters of detail and clarification as identified in the notes by Academic Office to the Panel are addressed;
ii)  That the team clarifies the institutional policy in relation to unpaid placement in the course document; and
iii) The team explains how the module that is taught alongside the Work-Based Learning module would be delivered for students studying abroad / supported by an Erasmus bursary.

Recommendations

That the course team:

i)   review and justify the formulation of the provision as two programmes, with a particular view to the market appeal of the titles;
ii)  review the ways in which induction might be staged across each semester and each level, paying particular attention to the induction arrangements for part-time students;

iii) review the level of Data Analytics module in relation to content and learning outcomes;

iv) review reading lists to underpin the levelness of the modules and provide an explicit statement of the principles adopted across each programme;

v) give consideration to the mix of programming languages taught and expected across the programmes;

vi) develop a sustained means of tracking the development of employability for students to allow them to develop an evidence base to take to employers / placement providers;

vii) review the preparation for Work Placement to ensure that it is foregrounded as part of the first year;

viii) articulate how the sustainability and development of the curricula will ensure currency over the period of validation;

ix) make explicit the ways in which internationalisation is articulated through specific modules and the programme as a whole;

x) make explicit the ways in which professionalism and ethics are articulated through specific modules and the programme as a whole;

xi) identify and make specific opportunities for external accreditation; and

xii) consider changing the title of the Testing module to Software Testing, the title of the Networking and Architecture module to Computer and Network Architecture, and the title of Data Analytics module to Data Science.

## 7    APPRECIATION

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