

ULSTER UNIVERSITY

REPORT OF A MEETING OF THE REVALIDATION PANEL FOR UNIT 16Ai COMPUTING (PG) (MAGEE CAMPUS)

6 March 2018

PRESENT: Professor Victor Gault, Head of School of Biomedical Sciences, Ulster University [Chair]
Professor Andrew Crampton, Associate Dean for Teaching and Learning, Department of Informatics, University of Huddersfield
Professor Mak Sharma, Professor in Computer Science Education, School of Computing and Digital Technology, Birmingham City University
Dr Tom Maguire, Head of School of Arts and Humanities, Ulster University

IN ATTENDANCE: Ms D Troy, Academic Policy and Standards Officer, Academic Office, Ulster University

1 BACKGROUND/INTRODUCTION

The panel was convened to consider the following provision.

- GradDip in Computing (Data Analytics/Software Engineering) (with GradCert exit award) (Microsoft – Dublin) (PT)
- MSc Professional Software Development (with PgDip/PgCert exit awards) (FT/PT)

GradDip in Computing (Data Analytics/Software Engineering) (with GradCert exit award) (Microsoft – Dublin) (PT)

The Graduate Diploma in Computing is delivered at Microsoft, Dublin in part-time mode only. It comprises seven compulsory and one optional modules (150 credit points) at level 6.

Intakes take place in September and January of each year and students follow the modules in the course in the same order regardless of intake point. Students undertaking the course are normally in related employment. There are two named pathways and students choosing to undertake one of these specialisms (either the Data Science Foundations or Software Engineering module) can graduate with a GradDip in Computing (Data Analytics) or GradDip in Computing (Software Engineering) respectively.

A GradCert in Computing exit award is available for students exiting after successful completion of 60 credit points (Professional Software Development 1, Professional Software Development 2, and Data Structures).

MSc Professional Software Development (with PgCert/PgDip exit award) (FT/PT)

The existing MSc Professional Software Development is an intensive one-year full-time programme. Part-time mode (normally undertaken over two years) is proposed to be introduced as part of this revalidation. It is a generalist programme aimed at attracting graduate students in any discipline (the programme presented can comprise a maximum computing content of 50%). It comprises 30 credit points at level 6 and 150 at level 7. All modules are compulsory.

The course at Ulster is accredited by the British Computer Society (BCS). It is also currently accredited with Certified IT Professional (CITP) (partial fulfilment) and at the next scheduled BCS visit, will be put forward once again in this regard.

2 DOCUMENTATION

The Panel received the following documentation:

1. Course submission;
2. Guidelines for Evaluation and Revalidation Panels;
3. QAA subject benchmark statements for Computing (2016) and Master's Degree Characteristics (2015).
4. Preliminary comments from Panel members.

3 MEETING WITH SENIOR MANAGEMENT TEAM

The Panel met with Professor Liam Maguire Executive Dean of the Faculty of Computing, Engineering and the Built Environment; Dr Michaela Keenan, Associate Dean (Education), Dr Michaela Black, Head of School of Computing, Engineering and Intelligent Systems, Dr Jim Harkin, Associate Head of School and Dr Adrian Moore.

3.1 Background and Rationale

The Panel asked the Senior Team to outline how the provision fitted in within the Faculty and the vision for the University's 5 & 50 strategic plan. The Senior Team advised that academic excellence was a key focus across the Faculty alongside the provision of courses that provided the required skills to work in the industry and conversion courses for students from other disciplines. Computing provision was now consolidated at the Magee and Jordanstown campuses. In terms of employability, staff across the Faculty and School worked very closely with industry, linking into the sector to address needs and skills deficits. The GradDip in Computing delivered at Microsoft in Dublin was a strategic direction to connect into the Irish Times Training (ITT) initiative.

The MSc Professional Software Development course was aimed at providing upskilling opportunities for the IT sector. The course had been extremely successful to date and word of mouth had been the main driver for recruitment due to the employability opportunities it offered on completion. Proposed revisions for revalidation had been informed by industry need and feedback from key stakeholders. ITT had approached the Faculty with a view to providing a course, which would address the skills shortages required to meet the needs of the industry.

The Team explained that the level 6 GradDip was designed for those from non-computing backgrounds. It was funded through the Springboard initiative and had proved so successful that there was a second intake this year. Funding was available for 150 credit points and this was the reason for the course comprising over the normal 120 credit points for a GradDip. It was noted, however, only 120 credit points were required to pass. The School was applying for funding for next year as the demand for the course was evident. Microsoft provided the physical resources for the delivery of the course as well as the provision of technical support.

Discussion took place in relation to the appropriateness of a Grade C mathematics for entry but the Team advised that this was the University standard as well as the requirement across its other programmes at this level.

3.2 Resources

The Panel noted that the GradDip had two entry points with a projected 100 students per year and asked how this would be managed within current staffing levels. For example, the project module would require a member of staff to undertake 17 hours of contact time per week. Using the project module as an example, the Senior Team provided clarification that the companies in which students worked provided a supervisor as well as the academic supervisor. Staff also used Skype, BlackBoard Collaborate and other means of keeping in contact with students rather than always undertaking a physical visit. Six new members of staff were also currently being appointed within the School. It was noted that some staff who had left the University under the recent restructuring had returned to deliver the course in Dublin. This also had the benefit of providing continuity for these students.

3.3 Student experience

Staff were asked how quality assurance was maintained in relation to employers and employer supervisors in order to ensure that students were getting the same experience. The Senior Team informed the Panel that the academic member of staff was very much involved in the whole process and in ensuring that the learning outcomes were being achieved. This also fed into the overall ethos of the course in terms of employability. Students were involved in summer projects with employers through existing relationships. Group meetings had been used in final year undergraduate programmes, which had received very positive student feedback, and it was the intention to introduce a similar model within these courses.

The Panel enquired as to the access to resources and other support for students registered in Dublin. The Course Director was the main point of contact with additional contact points available through ITT. A member of Ulster staff was present at registration in Dublin and a doctoral member of staff was also present in the laboratories who could provide assistance as required. Students had access to online resources through BlackBoard Learn and staff ensured that a range of material was made available. Flexibility of support existed and staff were reactive and dynamic in their approach.

In relation to library material, the Senior Team queried if students required hard copy texts and that much of the material was available electronically. This was not clear in the module reading lists and should be reviewed.

The Panel asked what support was available to students in terms of specific pastoral care and support requirements as an academic was not a professional in these areas. The Senior Team advised that Course Director was the main point of contact in this regard but that from experience, the level of other support required by these students was minimal; however, online support was available including access to the Care Call service. The same induction was provided to all students and students would be signposted to support mechanisms.

3.4 Introduction of part-time mode

A new part-time mode was being proposed in the MSc Professional Software Development. The Panel noted that the needs of full-time and part-time students were very different and asked how this would be managed if the two cohorts would be taught together. The Senior Team advised that they used a similar model on the MSc Data Science this academic year and this worked well. Classes were delivered from 4.00 to 9.00 pm on Monday, Wednesday and Friday each week with full-time and part-time students taught together. Both cohorts complemented one another and it also avoided the need for any double teaching. To date there had been no negative student feedback. It was noted that the School had its own dedicated laboratories that allowed them to draw up their own timetables.

3.5 Subject Liaison Board

The Senior Team provided the Panel with some additional details around the Subject Liaison Board. This was chaired by a CEO of a local company and current chair of Digital Capital in Northern Ireland and comprised of representatives from across the sector as well as the Executive Dean and Head of School. Discussions would highlight the needs of industry in terms of skills development, research development and changing requirements. The School was able to use this to inform the design and delivery of its programmes to meet these needs. It was a very engaging and worthwhile process. Furthermore, focus groups were also used to inform curriculum design.

In terms of employability, students were required to reflect on their own employability skills and build up an employability portfolio throughout the duration of the course. This portfolio of evidence was extremely useful for students when seeking employment.

3.6 Revised structure – MSc Professional Software Development

A revised structure for the MSc course had been forwarded following the submission of the final course document. The Senior Team advised that the rationale for this had been due to the timing of the full-time and part-time options and the realisation that these did not have to be the same. On this basis, it was the view that COM558 and COM809 needed to be undertaken early in the course and that it was better to make this change now. The revised structure would be reflected in all relevant sections of the revised course submission.

4 MEETING WITH STUDENTS

Written comments on the MSc Professional Software Development course had been received from three students in advance of the meeting. All students were very positive in terms of the curriculum, the employability prospects it provided, the staff and the application process. One issue raised was the possibility of being provided with some pre-reading in advance of the modules, to receive the timetable earlier and for increased information to be made available on the course website.

The Panel also met with three current students on the MSc course who were from a diverse range of undergraduate backgrounds. During discussions, the following points were noted:

- The excellent Software Development 1 and 2 modules which all students had really enjoyed and were a sound introduction to the course. It also greatly assisted the transition from different disciplines and the course built up from the foundations at the right pace.
- The Android related module seemed out of place within the programme although they did recognise why it was included. Some were of the view that it was very theory based but should have had a more practical focus.
- The overall course content was excellent and most modules comprised a good balance between lectures/theory and practical. Some felt that too much time was spent on lectures but acknowledged that the underlying theory had to be covered.
- Lecturing staff were excellent in terms of both the course and the support they provided. They were accessible and approachable and provided guidance and assistance as and when required.
- The course was very demanding and this should be reinforced at Open Days for prospective applicants, however, none of the students saw the workload as a negative.
- The positive employability prospects that the course would offer.
- Opportunities to provide feedback were available through in-depth module feedback forms.
- The provision of background reading or other material before the start of the course so as students could undertake some advance preparation.

- Students were involved in group work, which was a challenge on top of all the other pressures of the course, however, all recognised the importance of developing these skills and working with others.
- For group work assessment to date students had only been given a group mark.
- Working in groups during practical sessions had assisted in the final group work main project – students only realised during the meeting that this had perhaps been the reason behind this.
- A good variety of assessments were used.
- Feedback provided during semester 1 was more detailed than that in semester 2. This may have been due to the nature of assessment in semester 2 and that it was mainly provided electronically rather than the earlier paper based feedback.
- Resources and equipment were generally very good. The availability of hard copy texts for some modules was limited and additional copies would be welcomed.
- The small class size (currently 27 students) was a positive.
- Students felt they were well prepared for the project. A one-day workshop was held at the start of the semester and students were taken through the process step by step. It would have been useful to start preparations in semester 1 rather than 2, given the semester 2 workload.

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

5 MEETING WITH COURSE TEAMS

5.1 Revalidation/Curriculum Design Principles

The Panel asked the Course Team to outline how they had approached the revalidation and taken cognisance of the curriculum design principles in reviewing the provision. The Course Team advised that they had been delivering an MSc programme for a number of years at the Coleraine and Magee campuses that had until recently received Department of Education funding support. This funding was no longer available and all students were now self-funding. Computing provision was no longer available at the Coleraine campus and had been consolidated at Jordanstown and Magee. Programme deficits were identified and informed by feedback, firstly in the area of web technologies and for this reason, the new module Web Based Application Development was developed and introduced. Secondly, Software Architecture and Design was introduced to address some of the issues raised by students in respect of additional preparation for the project.

The GradDip had a number of modules in common with the PgCert course and was entirely funded by the Springboard initiative. Two specialist pathways to address particular industry needs were available in Data Analytics and Software Engineering and which allowed students to direct their study towards their chosen field.

In preparing for revalidation, for both the undergraduate and postgraduate provision, the team had consistently applied the curriculum design principles, in particular in relation to module learning outcomes and assessments.

5.2 Master's level

The Panel noted that some of the terminology used in the MSc Professional Software Development course did not accurately reflect level 7 and asked how this level was ensured in the course assessment and learning outcomes. The Team advised that they had worked

in line with guidance from Centre for Higher Education and Research Practice (CHERP) to ensure that the outcomes mapped to the appropriate level as well as to those of the professional body. The School had embraced the curriculum design principles in all its provision and were moving away from examinations within all courses. The Course Team explained how the course built up from the initial topics at level 6 to level 7, the reason which was due to the nature of a conversion course with students coming from diverse and non-cognate backgrounds. The Panel indicated that the module content was very much appropriate but that words such as 'foundation' or 'introduction' should simply be removed.

5.3 Research and scholarship informed curriculum and teaching

When asked, the Course Team advised the Panel that all staff were involved in scholarly and research activity and this informed both content and the range of project titles relevant to their own area of research. Students would be matched to particular staff depending on their interests and expertise with a project related workshop being held in January for students to be provided with information on what was required. The project analysis and design report would be submitted by 1 May, which assisted students in meeting the September project submission date.

In relation to other modules, all were informed by the wide range of staff research interests. Additional expertise was also provided through industry guest speakers to support students to be independent learners. The Upstart mentor programme in which students were required to undertake a Dragon's Den type pitch also made the programme very relevant, alongside invitations to relevant events as part of the Faculty's ongoing seminar programme. The Panel commended the Course Team in all their efforts in this area but noted that this was not evident in the course document.

5.4 Transition

The Panel enquired how students from a range of backgrounds were supported through the transition onto the MSc course and was advised that a boot camp held at the beginning of the year was the first main event to facilitate a smooth transition. The first semester modules were aimed at bringing all students up to the same level as quickly as possible. As a result of student feedback, the Team was also currently considering introducing additional support to bridge the learning between semesters 1 and 2. In relation to the provision of material in advance of the start of the course, the Team was mindful not to provide too much too early which may have a negative effect on students who were from a non-computing background. The Panel advised that advance information should include expectation setting in terms of assessment and ensure that students had a clear understanding beforehand. The Course Team advised that this was generally a very motivated student group and issues raised tended to be on course administration (forms and so on) rather than on support on the course itself.

In relation to the provision of a personal tutor, the Course Director was the main point of contact for the course and all staff were very accessible on an ongoing basis. Project supervisors allocated in January also provided students with direct access to ongoing academic support.

5.5 Employability

The Course Team advised the Panel that the nature of the computer industry did not involve face-to-face interviews but instead used whiteboard tasks. Students were required to evidence their employability skills but building up their own employability portfolio from the start of the course, which they could provide to potential employers. Support was also

available from the Career Development Centre and staff would also keep students informed of any available job opportunities. The School was also considering the introduction of Hackathons where undergraduate and postgraduate students could work collaboratively and engage on a regular basis. The School's excellent links with industry would facilitate this as well as the availability for students to undertake short work based projects.

Industry were keen to employ graduates from conversion courses who had backgrounds in other areas such as a graduate business studies student. These types of students were highly sought after as they brought a breadth of knowledge and skills.

The Team reported that of the nineteen graduates in September 2017, fourteen were in computing related jobs and the other five were non-responses.

5.6 Group work and assessment

The Panel commended the use of group work but noted that students had advised that they were provided with only a group mark for these types of assessments. This was not in line with the University's policy on group work that requires at least 25% of the mark should be attributed to individual assessment for modules, which contribute to an award classification. Group work marks should reflect the assessment for learning rather than assessment for effort. It was suggested that differentiation could be considered in terms of team roles or the use of peer assessment. The latter had been considered by the Team and could be facilitated through BlackBoard Learn. The Course Team would undertake a review of group work assessment as part of the revised submission. They advised that group work was used to develop industry and personal skills as well as to encourage the use of the Agile methodology, used by the majority of organisations within the industry.

In relation to ensuring parity of assessment load between modules, the Course Team provided the Panel with some background as to their approach and that student feedback across different modules was positive in relation to assessment. This included a wide variety of assessment methods including class tests, examinations, BlackBoard Learn tasks, and practicals, for example. The Course Team advised that the current assessment methods, for example lectures, did not reflect what took place in practice. The Team was advised that they should ensure that the modules accurately reflected what each involved and the detail of which could be provided in the learning and teaching methods section.

The reflective process also outlined by the Course Team was not articulated in the course documentation but the Panel commended this aspect.

5.7 Feedback

Students had noted that differing levels of feedback provided in semester 1 and semester 2 but that this may be due to the online nature of assessments in semester 2. In relation to the University's electronic assessment and feedback policy, the Team advised that online feedback was challenging for laboratory-based work and was not viewed as the best feedback method in this regard. Face to face conversations with students and laboratory interaction were an important aspect of students' learning. As a Team, they did challenge some of the University's policies. The Panel suggested that the relationship between formative and summative assessment and the number of assessment points should be reviewed which may assist in addressing these issues.

5.8 Reading lists

The Panel enquired as to the apparent inconsistency in the number of required and recommended texts across the modules. The Team advised that some topics were very

specific and required very specific texts whilst others had a wider range of background reading. The differences between modules was due to the individual learning context, whether theory or practical, as well as the topic being covered. The Panel stated that consistency of approach was important from a student perspective as well as how the resources supported independent learning. This should include reference to all relevant material, including links to electronic sources.

5.9 Internationalisation

The Course Team advised that the MSc Professional Software Development had been selected within the School to be marketed internationally and proactive recruitment was already underway.

In terms of the programme itself, internationalisation was possible within the project, however, an extended model from three to six months was currently being considered which may better facilitate this aspect.

5.10 Resources – Microsoft, Dublin

The Panel asked for clarification on the available resources for the GradDip delivered in Dublin and was advised that Microsoft provided the physical resources, and indeed had recently moved to new state of the art learning spaces, as well as all technical support and provision of cloud work based learning. Lecturing staff were provided by the University. It was noted that Microsoft were a full partner in relation to the Springboard funding. The Course Team further noted that negotiations were ongoing with other organisations in relation to similar course delivery.

6 CONCLUSIONS

The Panel commended the programmes on the following:

- i) The links with industry;
- ii) The integration of research to inform the curriculum and teaching;
- iii) The very positive student feedback and the support provided to them;
- iv) The clear focus on employability;
- v) The very experienced team and the collegiality of staff;
- vi) The relevance of the curriculum and its effectiveness in meeting industry needs.

The Panel agreed to recommend to the Academic Standards and Quality Enhancement Committee that the programmes be approved for a period of five years (intakes 2018/19 to 2022/23 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 13 April 2018** for approval by the Chair of the Panel.

Conditions

- i) That all issues identified by the Academic Office and detailed in the appendix to the panel report are addressed (to include the revised structure for the MSc Professional Software Development and the use of group marking for collaborative projects to allow for differentiation based on learning not effort);

Recommendations

- i) To review the module learning and teaching methods to accurately reflect the teaching methods and effort hours (section 5.8 refers);

- ii) To review the relationship between formative and summative assessment and the number of assessment points (sections 4 and 5.7 refer);
- iii) To review the module descriptions in terms of consistency, currency and availability of resources, including reading lists, to support independent learning (sections 3.3 and 5.8 refer).

7 APPRECIATION

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