

## ULSTER UNIVERSITY

### REPORT OF A MEETING OF THE EVALUATION PANEL FOR UNIT 30F: ACCESS DIPLOMA IN MATHS AND ENGINEERING / ACCESS DIPLOMA IN MATHS AND FINANCE

22 November 2018

**PRESENT:** Professor Suzanne Martin, Head of School of Health Sciences, Ulster University (Chair)  
Professor Colin Turner, Professor of Engineering Education, Ulster University  
Professor Kathryn Burnett, School of Pharmacy & Pharmaceutical Sciences, Ulster University  
Dr Shyamal Mondal, Lecturer, Engineering / Mechanical Engineering and Design, London South Bank University  
Mr Jonathan Ridley, Head of Engineering, Warsash School of Maritime Science and Engineering, Solent University

**IN ATTENDANCE:** Mrs Maeve Paris, Faculty of Computing, Engineering and the Built Environment.  
Ms Carol Reid, Ulster University Business School.  
Mrs A Guarino, Academic Office, Ulster University

#### 1 BACKGROUND/INTRODUCTION

The Panel was convened to consider the Access Diploma in Maths and Engineering and the Access Diploma in Maths and Finance. The proposed courses would be offered at the Belfast Metropolitan College, Millfield campus.

The College had offered similar access courses in the last five years, validated by Queen's University Belfast (Access Diploma in Foundation Studies Engineering and Access Diploma in Foundation Studies Maths and Computing), with an average cohort of 22 students in each course. The College was seeking validation from Ulster University to align all STEM Access provision within the one provider.

The proposed provision would offer equivalence to both GCSE Mathematics and GCSE English at Grade C or above.

The access provision would be offered in both full-time (1 year, 2 semesters) and part-time (2 years, 3 semesters) modes leading to an Access Diploma in Maths and Engineering or an Access Diploma in Maths and Finance. Each course would offer 6 compulsory 20 credit point modules (40 credit points at level 2 and 80 credit points at level 3).

There is an exit award associated with each course. Students who would successfully complete 60 credit points would be able to exit with a Certificate in Adult Learning.

## 2 DOCUMENTATION

The Panel received the following documentation:

- Course submission;
- Notes for Evaluation Panels on University of Ulster Access Course Requirements;
- Reports from central University departments on Library and IT resource matters;
- A statement from the Faculty Partnership Manager; and
- Preliminary comments from Panel members.

Prior to the meeting, the Panel members were taken on a tour of the facilities available to support delivery of the provision. The Panel found the tour to be beneficial and informative and considered the facilities to be excellent. The Panel specifically commended the Student Support team, noting their outstanding commitment and enthusiasm in providing a wide range of services such as the Careers and Employability Service, Student Funding Advice and Guidance Service, Student Wellbeing, Inclusive Learning Service, and the Student Counselling Service.

## 3 MEETING WITH SENIOR MANAGEMENT TEAM

### 3.1 Admission and Entry Requirements

The Panel asked the Team to elaborate on the rationale behind the entry requirements, specifically how the evidence of basic competency is assessed. The Senior Team explained that the provision sits within the wider context of the school, which offers widening access and essential skills provisions to a wide range of students.

The essential skill diagnostic that would be used was already successfully implemented in other College provisions. In the initial stage, the team would run a Pre-Entry Guidance conference (PEG), followed by the diagnostic to assess competency in literacy and numeracy. Two weeks later, the students would be invited for an interview where they would have a chance to illustrate their willingness and motivation, as well as to discuss their likelihood of completing the provision alongside other commitments they may have, such as family or work responsibilities. The team explained that this process has not been designed as an admission barrier but rather it was a tool to assist the applicants in their decision process and ensure low attrition levels.

In response to the Panel's query, the Senior Team explained that the rationale for the new provision not having any formal entry requirements, and the move away from the current entry criteria of GCSE Maths Grade B and GCSE English or Equivalent level 2 Literacy qualification, was to align with the College's widening access ethos and to enable a broader approach. The Team explained that a high percentage of their students came from deprived areas of Belfast, and the decision to remove the entry criteria was to allow more students with no qualifications to be accepted.

Considering the diverse abilities of the student body, the Panel queried the strategy to support the lower skilled students while still engaging and challenging the more

qualified ones. The Team assured the Panel that all staff members have access to staff development and training using the Technology Enhanced Learning (TEL) hub. The team explained that there were 5 core modules accessible to all staff which were designed to develop staff skills in a variety of areas, such as differentiation within the classroom in relation to both teaching and assessment, and development of skills for managing and coping with a range of students' backgrounds and abilities.

### 3.2 Computerised Mathematics

In response to the Panel's query the Team explained that computerised mathematics would not be taught as they felt that it would be more beneficial for the students, considering their initial mathematical ability, to gain better understanding and knowledge of mathematics at a basic level. They explained that the students would need to learn fundamental basic structure in written form prior to being able to advance to computers. However, the Team accepted the Panel's suggestion of exposing the students to demonstrations of computerised mathematics during their course for example MathLab.

### 3.3 Exit Awards

The Team explained that the purpose behind the exit award was to motivate the students who are struggling to complete the full provision for a variety of reasons, to complete the first semester with a view that they could, in the future, return and complete the rest of the modules and gain the Access Diploma. The Panel highlighted that this would not be an automatic process, and that students would be able to seek exemption to modules they have passed provided the module content has not changed and provided it was within the Faculties' allowed time frame (5 years for the Faculty of Computing, Engineering and the Built Environment, and 9 years for Ulster University Business School).

### 3.4 Student Support

The Panel queried how the Team would provide support to students with diverse backgrounds, personal difficulties or disabilities. The Team assured the Panel that they would have robust mechanisms of support ranging from assigned personal mentors to special support and allowance, tailored and assigned on an individual basis.

### 3.5 Title of Access Diploma in Maths and Engineering

The Panel queried, following a review of the modules offered within the course, why the Team opted for the use of Engineering in the title rather than Physics. The Team explained that the name was chosen for marketing reasons. Their current experience indicated that students were more inclined to consider a pathway to an Engineering course at University rather than Physics. Accordingly, they felt that the inclusion of Engineering would provide a signpost for potential applicants.

### 3.6 Provision Structure

The Team explained the decision to offer both a full-time and part-time mode was based on the current provision which had an even distribution of students studying

both modes. The Team has found, that the part-time mode is a desirable option for many of the students who have family or work responsibilities.

The Panel requested the Team provide further information and clarity regarding the structure of the part-time mode in the course document.

### 3.7 Instances of Delivery

The Panel queried the delivery of the module *Core Physics* on both Millfield and Titanic campuses. The team explained that this was unavoidable as there were currently no lab facilities on the Millfield campus. The Team assured the Panel that they would base a full day in the Titanic campus avoiding the need to move campuses mid-day, although both campuses were within walking distance from each other.

### 3.8 Minimum and maximum student cohort size

The Team agreed with the Faculty's recommendation of a maximum number of 22 students per full-time cohort and 20 students for the part-time cohort, and a minimum cohort of 15 students (full-time and part-time separately) to ensure course viability and a quality student learning experience.

### 3.9 Internationalisation

The Team explained that attracting International Students had been challenging due to the difficulty in finding work in Northern Ireland coupled with the brand recognition of A Levels being much stronger than an Access Diploma. Nevertheless, they added that the College has an International Office to support students if they join the provision.

## 4 MEETING WITH COURSE TEAM

### 4.1 Assessment and Feedback

The Panel discussed the various module assessment methods with the Team.

#### *Core Mathematics and Advanced Mathematics*

The Panel requested clarity on the use of workbooks for assessment in both Core Mathematics and Advanced Mathematics modules. The Team explained that they would use the Edexcel AS workbook for this purpose. Following each taught topic, they would refer to the key summary points and exercises in the book, as a structured approach to track progress and competency across all the learning outcomes. This would be done on a weekly basis to ensure a managed workload.

#### *Applied and Core Physics*

The Panel queried the linked assessment of the Applied Physics and Core Physics modules. The Team explained that the students will complete all practical work in the Core Physics module and then do the write up and calculations in the Applied Physics module, allowing the students to gain clearer understanding of the practical aspects behind the theory. Although the Panel commended the horizontal integration of the

two, they expressed concern that this might be difficult for students to grasp, pointing out that failure in the assessment would result in a failure of both 20 credit point modules. The Panel requested that the assessment for the Core Physics and the Applied Physics modules be separated.

#### *Core Mathematics*

The Team explained that the Multiple-Choice Questions were offered only in the level 2 modules as a way of gradually building student confidence and skill. At level 3 there would be a move towards closed book questions to enable students to demonstrate their acquired skills. The Panel suggested the Team considered adding an element of choice to the 9 question examination to lower student stress.

#### 4.2 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 confirmed that they would devise an assessment procedure for group work which would adhere to the University policy.

#### 4.3 Ethical and Moral Learning Outcomes

The Panel commended the inclusion of ethical and moral learning outcomes as a growing area of interest, querying how these would be assessed. The Team explained that these would normally be assessed during the presentation in the Principles of Finance module, where students review particular businesses and companies.

#### 4.4 Formative assessment

The Team explained to the Panel that formative assessment was being used informally. The Panel discussed various forms of formative assessment that could be used, encouraging the Team to consider embedding more forms of formative assessment into the provision as a way of building students' confidence and preparing them for the summative ones.

#### 4.5 Exemplar Assessment Table

The team explained to the Panel that the heavy reliance on class test and coursework was in order to align with the assessment strategy at both GCSE and A Level. This continual assessment derived from the use of AS and A level workbooks. The Panel agreed that these assessment types were suitable in this case and aligned with the assessment students would encounter when advancing to University.

The panel asked the Team to articulate their assessment strategy in the course document in line with their discussion, and to provide rationale for the scaffolding nature of the overall assessment structure as well as describe what approaches are taken in regards to moderation.

#### 4.6 Curriculum design principles

The Panel asked the Course Team to outline how they had taken cognisance of the new curriculum design principles in designing the provision. The Team detailed the provision's design process, highlighting the valuable support they received from Ulster University's Faculty Partnership Managers. The Team assured the Panel that a lot of time was devoted to examining and revising the existing provision to align with the new principles. This design also incorporated valuable input from students, obtained both formally by way of end of module surveys and from informal conversations conducted with students.

The Panel raised concern regarding the high word count required in the reports in the Introduction to Physics module, specifically as it would be delivered as a level 2 module. The Panel suggested, for this specific subject area, that this be revised, and the Team consider a page limit to be used instead.

The Panel highlighted various modules in which non-linked items of assessment were grouped as components under one single item. The Panel pointed out that the Curriculum Design Principles guidance suggests components need to be linked in order to justifiably be grouped under one item of assessment. The Panel suggested the Team separated the non-linked items of assessment and provided a rationale for deviating from the Curriculum Design Principles

#### 4.7 Programme Learning Outcomes

The Panel commented on the density of the programme learning outcome maps asking the Team to revise the map to reflect the actual contribution of each module to the programme learning outcomes mapped.

#### 4.8 Introduction to Mathematics

This module has 2 class test at the end of the 6 weeks, one which allows students the use of a calculator and one which doesn't. The Panel suggested this be redesigned as one test to include an hour with the use of a calculator and an hour without, to align with GCSE structure.

#### 4.9 Equivalence to GCSE Mathematics and English

After reviewing the course document and the modules content, the Panel agreed with the Team's assessment that successful completion of the access courses would offer equivalence to a GCSE in English and Mathematics at a grade C or above. The Team explained that achieving 70% in the Introduction to Mathematics (Level 2) would offer equivalence to a GCSE in Mathematics Grade B, and achieving between 40% and 69% would offer equivalence to a Grade C. The Panel commended the content of the Mathematics modules as particularly relevant to the provision's related University pathways.

## 5 CONCLUSIONS

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

- the preparation and quality of the documentation;
- the team ethos, dedicated staff who were engaged and invested in the programme and the students;
- the genuine student support mechanisms;
- the thought behind the programme structure and provision of the part-time mode to accommodate students' needs;
- the mixture of teaching and learning styles; and
- the articulation of learning outcomes outside of the discipline to include transferable skills.

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 18 January 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 diagnostic test to assess competence in literacy and numeracy be given to all applicants and not just in cases of over-subscription;
- iii) that the assessment for the Core Physics and the Applied Physics modules be decoupled; and
- iv) that the course structure be articulated explicitly within the course document, clarifying the timeline for the level 2 and level 3 modules for both full-time and part-time modes.

### Recommendations

- i) that the students be exposed to demonstrations of computerised mathematics;
- ii) that the assessment and feedback strategy be articulated within the course document, and rationale be provided to clarify the scaffolding nature of the overall assessment structure; that non-linked assessment components grouped within items of assessment be separated; and that consideration be given to the introduction of formative feedback;
- iii) that the programme learning outcome maps be reviewed and revised; and

iv) that following the first recruitment cycle, the course team reflects on the suitability of the course title *Access Diploma in Maths and Engineering*.

## 6 APPRECIATION

The Chair thanked the Panel, particularly the external members, and the Course Team for their valuable contribution to the validation process.