ULSTER UNIVERSITY

REPORT OF A MEETING OF THE EVALUATION PANEL FOR UNIT 4i: MSc ENERGY STORAGE

31 October 2018


PRESENT:      Professor Kristian Lasslett, Head of the School of Applied Social and Policy Sciences, Ulster University (Chair)
Dr Barbara Skinner, Senior Lecturer, School of Education, Institute for Research in Social Studies, Ulster University
Dr Robin Wilson, Head of Department, Architecture and Built Environment, University of Nottingham
Professor John Currie, Director, Scottish Energy Centre, Edinburgh Napier University


IN ATTENDANCE: Mrs A Guarino, Academic Policy and Standards Officer, Ulster University


1    BACKGROUND/INTRODUCTION

The Panel was convened to consider the provision of Master of Science in Energy Storage. The proposed provision would be offered in full-time mode over one academic year (3 semesters) and part-time mode over three academic years (6 semesters) at the Jordanstown campus – moving to the Belfast campus in 2021. The School is planning in the future for the provision to be also offered fully online in part-time mode. The course comprises of eight compulsory 15 credit point modules, including 4 fully online taught modules shared from PgDip/MSc Renewable Energy and Energy Management, and also utilise the same 60 credit point dissertation module. A PgCert and PgDip exit awards exist for those completing 60 and 120 credit points respectively.

During the academic year 2019/2020 professional accreditation would be sought for the MSc Energy Storage (through an Engineering Council accredit body – Energy Institute). Once accredited by the Energy Institute, it would provide a route to chartership (CEng) for BEng (Hons) Architectural Engineering, BSc (Hons) Energy, BEng (Hons) Mechanical Engineering at Jordanstown, and BEng (Hons) Renewable Energy at Magee, all within the Faculty of Computing, Engineering and Built Environment.


2    DOCUMENTATION

The Panel received the following documentation:

- Course submission;
- Guidelines for Evaluation and Revalidation Panels;

- QAA Benchmark Statement for Master's Degree Characteristics (2015);
- QAA Subject Benchmark Statement for Master's Degrees in Engineering (2015);
- Reports from central University departments on Library, IT and digital learning matters;
- Preliminary comments from Panel members.


## 3 MEETING WITH SENIOR MANAGEMENT TEAM

### 3.1 Provision Context

The Panel expressed how impressed they were with this innovative provision, and how it meets a real world need, and asked how it sits within the national context. The senior team explained that although some components relating to energy storage were being taught in other programmes offered by the school, this would be a specialised provision designed around this constantly evolving and dynamic field. The senior team added that the provision was particularly relevant to the UK and Ireland as they were undergoing a shift towards regeneralised distribution of energy.

### 3.2 Modes of Study

The Panel asked for further clarification relating to the modes of study that would be offered. The senior team explained the full-time and part-time provision would be targeted at both international and home students. They mentioned that in certain markets, such as China and India, distance learning provisions were not accepted, adding that, in the first instance, only campus based full-time and part-time provision would be offered. The senior team described plans to collaborate with Global Engagement to attract more students from China and India.

### 3.3 Potential Students

In response to the Panel's query, the senior team described the potential full-time students to be recent graduates from both home and overseas. As Northern Ireland was aspiring to deliver 40% renewable electricity and 10% renewable heat by 2020, the potential part-time students would be professionals, mainly engineers.

### 3.4 Student Numbers

The panel discussed with the senior team the inaccurate presentation of the projected students numbers, described in the course document as 30 per year from the first year of the provision delivery. The senior team agreed that from previous experience a number of 10 students for the first cohort might be more realistic, gradually rising in subsequent years. The senior team added that initially the provision would offer a progression route to existing undergraduate students, but they expect, over time, to attract a growing number of international students. They agreed the realistic projection of student numbers, as well as the minimum and maximum numbers for the next five years, would be included in the revised course document.

3.4    Resources

In response to the Panel's query regarding resources to support growth in student numbers, the senior team explained that resources were in place to support a cohort of 30, as they had links with 63 local companies available to accommodate the dissertation students. Any expansion would require them to expand their industrial links or focus solely on expanding the distant learning provision.

The senior team assured the panel, in regards to staff wellbeing, that there were robust mechanisms in place to support staff working with growing numbers and the online provision. Each member of staff was provided with an iPad or a ServicePRO and the Faculty has been working closely with the IT team to provide additional add-ons and packs to support staff with online moderation.

Any difficulties that arise would be fed back to the senior team and would be reflected upon. Over the past 3-4 years since the technology was introduced, staff have been engaging with the new technology and reported that it was helpful in various ways. It has not been seamless but staff have been adopting it into their practice and as a result enhancing student experience. The senior team commended the exceptional support and responsiveness of the IT team.

3.5    Assessment

The senior team explained that although officially feedback was offered within 15 working days in line of Ulster's regulations, they would aspire to provide the students with feedback within 2 weeks. They explained that while this would be easily achieved in smaller classes, in the larger classes there might be a need to move to team based teaching to accommodate the aspirational feedback timeline, adding that the digital devices staff used would assist with achieving this ambitious turnaround schedule.

Staff workload was closely monitored to reach equity, such as with dissertation supervision. If there was a spike with student numbers they would draw on other staff members (such as from the research team) to help the core teaching staff, which in turn, would also help the research staff's careers as well as providing them with specific teaching experience.

3.6    Move to Belfast

The Panel were informed that the move was planned for 2021, and that the team were in the final planning stage, and were assured that the Belfast campus would offer similar lab spaces to Jordanstown. A lot of attention was given in the strategic planning stage to ensure the successful move and calibration of the machines, as well as perfecting the timetabling sequences to allow for a seamless move which would not affect the student experience. The Panel was informed that the team has been working closely with the Student Union representatives throughout the process, and that they would be informed in advance of the move.

3.7    Work Experience

The Panel queried how the programme would accommodate work experience for local and international students. The senior team replied that students would be guided to

look for links with industry from their first semester and some would successfully ally with local industry and travel to their chosen work placement. In case of travel limitations for local or international students, the dissertation would be more research focused.

### 3.8 Entry Requirements

The senior team assured the Panel that there would be a formal process in place, in line with the University's APEL regulations, to review cases where applicants come from a professional background with no HE qualifications. The Panel noted that in these cases, offers would be made on the bases of an interview as well as a portfolio submitted by the applicants.

### 3.9 Professional Accreditation

The Panel commended the senior team for pursing professional accreditation expressing the benefits for marketing purposes. The senior team explained that they would be looking at achieving the accreditation as soon as possible and possibly back date it as well.

## 4 MEETING WITH COURSE TEAM

### 4.1 Assessment and Feedback

The Panel expressed concern that the modules would be solely assessed by coursework, querying how the team would ensure academic integrity. The team explained that as many of the modules would be taught online, in order to ensure academic integrity, the assignments would be individualised. As the students would be both local and international, targeted assignments with regional contexts would ensure a unique submission from each student. In addition, the team explained that the coursework would require students to exhibit critical thinking and innovation and present their own points of view, as well as to present their work outlining their learning process. *Turnitin* would also be used to prevent plagiarism.

### 4.2 Work Based Learning

The Panel commended the team on their outstanding links with industry, and queried how the students would benefit from these during their studies. The senior team explained that, as most of the part-time students would already be working, they would be encouraged to base their dissertation topics on their existing jobs or future interests.

In addition, the programme would include site visits to various industries. Based on these industry visits, the students would prepare a comparative analysis as part of their coursework. The team explained that they also planned to offer seminars with local industries, which would not only illustrate real life case studies but also introduce key player in the local industry.

4.3     Software

In response to a question from the Panel, the team advised that the majority of the relevant software would be free and easily downloaded, giving the example of *MATLAB* and *EnergyPLAN*. The team explained that the latter was successfully tested with students who reported ease of use. With this software, students would be able to develop energy scenarios to show the benefits and impact of electrical energy storage techniques.

4.4     Curriculum Design Principles

The Panel queried the provision's structure which deviated from the curriculum design principles' recommendation of 20 credit point per modules. The team explained that this was a result of the provision utilizing existing MSc modules of 15 credit points each. In addition, this would provide the team with added flexibility if future modular changes would be required.

The team explained that the 6 learning outcomes in the Research Dissertation module have been reduced from 12. The team felt this module justifies deviation from the recommended 4 learning outcomes as it would be the final module of the provision, incorporating a combination of research and experience into the dissertation.

The Panel raised concern regarding the high word count required in the research dissertation, and requested the team reduce the word count, currently at 30,000 words, in line with University recommendations.

4.5     Provision Structure

The Panel explained to the team, that, in line with University policy, the Research Dissertation module would need to be delivered in year 1 semester 3 for the full-time mode and year 3 semesters 1&2 for the part-time mode. The Panel requested the provision structure in the course document be revised accordingly.

4.6     Reading Lists

The Panel was of the view that the reading lists in the module descriptions were not specific enough, listing Journals and online resources with no clear guidance for students. The team was asked to consider revising the reading list to provide students with a clear direction and guidance in relation to the required and recommended reading.

4.7     Distance Learning Delivery

The Panel was advised, that as the provision would not be offering the Distance Learning mode in the first instance, module ENE706 will only be delivered in Jordanstown and that a fully online instance will be developed and added later on, only when Distance Learning mode is introduced. The team noted that, as this would be after the document has been approved, a CA3 form would need to be submitted. It was communicated to the team that, in addition, the course document would need to be revised to reflect only the campus based modes of delivery, and the fully online version should be removed.

5    CONCLUSIONS

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

- Offering a relevant pathway for a portfolio of undergraduate courses offered by the Faculty of Computing, Engineering and Built Environment, and addressing a gap in the UK higher education market;
- Embedding of the provision within an existing cutting edge research environment with students having the opportunity to be taught by an enthusiastic, high calibre research team;
- Covering a wide range of modules and breadth of content;
- Offering a locally based professional pathway to Northern Irish students as well attracting international students, providing an opportunity for a rich and diverse cohort; and
- Outstanding industrial links.

The Panel agreed to recommend to the Academic Standards and Quality Enhancement Committee that the programme be approved for a period of **two** years (intakes 2019/20 to 2020/21 inclusive) to align with the revalidation schedule for Unit 4: Building (Energy), 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 12 December 2018 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 projected cohort sizes be revised in the final document to reflect indicative minimum and maximum student numbers for each mode of delivery for the next 5 years; and

iii)  that the word count limit for the Research Dissertation be revised in line with the Curriculum Design Principles.

Recommendations

i)   that clarification be provided in the course document on how the existing strong industrial links would be formalised and incorporated into the programme;

ii)  that consideration be given to utilising the close industrial links to offer a range of Continuing Professional Development (CPD) courses;

iii) that additional information be provided on how the distance learning students be supported and ensured an equal learning experience to campus based students, in relation to practical work, learning support and software needs.

6    APPRECIATION

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

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