Bachelor of Engineering (Honours) in Building Energy Systems (Level 8)

VALIDATION PANEL

Tuesday 20th April 2010

Panel:
Mr Albert Byrne, Head of Department of Engineering Technology, WIT
Mr Martin Conheady, Rockwell Construction Ltd.
Mr Con Leddy, Associate Director, PM Group
Mr Ed Riordan, Deputy Registrar and Head of Academic Quality, CIT

CIT Staff:
Mr Matt Cotterell, Head of School of Mechanical & Process Engineering, and School of Electrical & Electronic Engineering
Mr Daithí Fallon, Head of Department of Manufacturing, Biomedical & Facilities Engineering
Mr Fergus Delaney, Lecturer and Building Services Engineering Course Coordinator
Mr Chris Gibbons, Lecturer and Sustainable Energy Engineering Course Coordinator
Mr Willie Bateman, Lecturer
Mr Michael P. O'Mahony, Lecturer
Mr Bill Corr, Lecturer

Introduction

This one-year programme is proposed by the Department of Manufacturing, Biomedical & Facilities Engineering as an add-on honours degree progression route for graduates of the established 3-year ordinary degree in Building Services Engineering. Currently, level 7 graduates seeking progression to honours degrees have had to apply to programmes in DIT or Newcastle University, UK.

Feedback indicates that graduates from the level 7 degree are somewhat limited in their employment prospects as their career progresses. This add-on year will enhance the broad engineering expertise of those graduates and provide them with a advanced skill-set.

In proposing this programme, the department seeks to fulfil its obligation to the Institute's policy of providing a Level 8 progression route for all disciplines

Overall Structure of the Programme & Need for the Programme
The proposers briefed the Panel as follows.

- The programme title as it stands reflects the type of graduate that the industry recognises and requires. A title such as Energy Systems Design might be more appropriate but would cause some confusion for prospective students. Changing the title to Energy Systems Design would also mean that the programme would stray into the market that the Sustainable Energy Engineering programme currently occupies. The programmes seek to complement, not compete with, each other.
- The Sustainable Energy Engineering programme is oversubscribed, and it is expected that some of these applicants will be redirected into the new Building Energy Systems honours degree. The departments will seek to exploit efficiencies in terms of shared modules where possible between both programmes.
- The one year add-on is broader in scope than building services per se. The modules will be at an advanced level appropriate to an honours degree. Analysing and optimising energy systems will both form part of the programme.
- The panel recommends that the proposed *BER* module should be re-titled as *Fundamentals of Commercial BER* so as not to mislead prospective students into believing that they will be certified

Commercial BER analysts. Students who complete this module should be required to take a top-up course to complete the process of becoming certified. This needs to be stated clearly in the module descriptor.

- As regards the availability of student projects, work placement in the 3rd year of the existing Mechanical Engineering and Sustainable Energy Engineering honours degrees has resulted in students on work placement acting as conduits for industrial projects being brought back into the college. There has also been experience of certain companies generating 2 or 3 distinct projects for the Institute.
- There is a considerable demand from CIT's Building Services Engineering level 7 graduates for this programme. Enquiries are not only from recent graduates, but also those who graduated a few years ago, and who have since gained significant work experience. The initial intake of 20 students will focus on CIT's level 7 graduates who have attained the requisite 50% average.
- In line with the other BEng honours degree programmes in the Institute, the proposers would like to stipulate that this programme should incorporate an individual final year project for each student. There are resource implications for this decision which need to be taken into consideration.
- The department is in the process of hiring a Building Services Engineering lecturer to supplement the teaching on the add-on year. This individual will fill the specific deficit in lecturing hours required for the programme, as well as the increased project supervision hours which would stem from individual project supervision.
- As regards physical resources, there have been ongoing improvements in terms of labs and available resources. These improvements will continue into the future with the repatriation of certain labs back to CIT from their present off-campus locations.
- This proposed BEng Honours programme will be presented to Engineers Ireland for Associate Membership. Prospective students will be told that the add-on degree will not be eligible for Chartered Membership status.
- The department is in the process of developing cross-discipline taught masters programmes, one of which has already been lodged for validation. The departments of Mechanical Engineering and Manufacturing, Biomedical & Facilities Engineering envisage a joint proposal in the future from the sustainable energy/energy systems areas.

Individual Modules

- The draft modules have all been reviewed by external experts as well as by the CIT Module Moderator. Many other modules (labelled "Approved" in the submission documents) have been pre-approved under CIT QA processes and are operating.
- The majority of the changes suggested by the external experts and the Module Moderator have been incorporated into the modules as they appear in the document. Some minor suggested amendments cannot be made because of operational or Institute policy issues.
- *Energy Efficient Design* – this module will cover the generic steps in the design process, systems that will help to achieve what the client wants using the most energy efficient systems. The module aims to inform the student as to what question needs to be asked at each design stage, as well as the implication of each decision. **The panel recommends** making specific mention of "Energy Venn Diagram" in the indicative content of this module.
- The panel **recommends** that poor performance or poor attendance should be notified to the individual students on an ongoing basis; particularly given the considerable reliance on 100continual assessment. This creates a paper-trail which ultimately assists both the student and the lecturer. This is particularly relevant in modules for which there isn't a repeat exam option and re-attendance at the module is necessary.
- The *Commercial BER* module as it stands is very challenging. While being a very useful module for graduates, it is an elective module, and this will allow students to choose other modules which might be perceived as being easier. The note above re poor attendance/poor performance needs to be mentioned specifically in relation to this module as there is no repeat exam option.

Findings

- The programme as presented is of very high quality and will result in a very challenging programme of study for the students.
- The programme title is appropriate. There is an established building services engineering profession which the department is keen not to stray away from.
- The panel agree that providing individual student projects in the final year is desirable. The department needs to put in place a process for ensuring that they are able to provide projects for all students, or provide alternative options.
- The panel are happy to recommend validation of the programme. It is understood that minor corrections and amendments are being completed.