



Date of Meeting: 15 April 2011

Named Awards: Bachelor of Science;
Master of Science

Programme Title: Bachelor of Science (Honours) in Cloud Computing;
Master of Science in Cloud Computing

Award Type: Honours Bachelor Degree; Masters Degree

Award Class: Major

NFQ Level: 8 (BSc Hons) & 9 (MSc)

Intakes Commencing: September 2011

ECTS/ACCS Credits: 60 (BSc) & 60 (MSc)

PANEL MEMBERS

Name
Mr Seamus O'Shea, Head of School of Science & Computing, IT Tralee (Chairperson)
Dr Jim Buckley, Department of Computer Science & Information Systems Development, University of Limerick
Mr Joe Hanly, Solar Winds Software Europe Ltd.
Mr Declan Williamson, Cloud Integration Manager, IBM
Mr Ed Riordan, Deputy Registrar & Head of Academic Quality, CIT

PROPOSING TEAM MEMBERS

Name
Mr Michael Loftus, Head of Faculty of Engineering & Science
Dr Hugh McGlynn, Head of School of Science & Informatics
Mr Jim O'Dwyer, Head of Department of Computing
Mr Tim Horgan, Lecturer and Programme Leader, Department of Computing
Mr Vincent Brennan, Senior Lecturer, Department of Computing
Mr Pat Punch, Technical Support Manager, EMC
Mr Gordon O'Reilly, VMware, Cork
Mr Pat McCarthy, Senior Technical Officer, Department of Computing
Ms Linda O'Sullivan, Lecturer, Department of Computing
Mr Gerard Long, Lecturer, Department of Computing

BACKGROUND TO THE PROPOSED PROGRAMMES

A one-year add-on honours degree programme and a 12-month taught masters programme are proposed by the Department of Computing at Cork Institute of Technology. The programmes have been developed in close partnership with the industry, particularly EMC and VMWARE, and in response to industry demand for suitably qualified graduates in the rapidly-growing field of Cloud Computing.

FINDINGS OF THE PANEL

1. General Findings

*NOTE: In this report, the term "Requirement" is used to indicate an action or amendment which in the view of the Panel **must** be undertaken prior to commencement of the Programme. The term "Recommendation" indicates an item to which the Institute/Academic Council/Course Board should give serious consideration for implementation at an early stage and which should be the subject of on-going monitoring.*

The panel commends the programme development team on the proposal. It was impressive that industry was a formal partner in module and programme development; and that industry members as well as CIT academics participated fully in the validation meeting. The proposal document outlines two excellent programmes, which are well designed to suit an emerging industry. The department should be commended for recognising and responding to this identified area of growth.

2. Validation Criteria

The Panel has considered the documentation provided and has discussed the programme with the proposers. The panel has concluded that the programmes meets the required standards in the Science field of study at Levels 8 and 9 of the National Framework.

With regard to the CIT Validation Criteria:

2.1 Is there a convincing need for the programme with a viable level of applications?

YES.

2.2 Are the level and type of the proposed awards appropriate?

YES.

2.3 Is the learning experience of an appropriate level, standard and quality?

YES.

2.4 Is the programme structure logical and well designed (including procedures for access, transfer and progression)?

YES. The programme team propose to run the masters programme over two years initially through a part-time delivery mode. The BSc will operate on a full-time basis from the outset.

The level of e-learning offered on the programmes will be dependent on the cohort and their availability. E-learning expertise is established in CIT and is operational on a number of programmes across the Institute. The provision of e-learning it will be supported by the industry partners. Guest speakers from both technical and management backgrounds will be available via the e-learning platform.

Recommendation: The balance of traditional lectures, e-learning, directed learning etc. needs to be clearly documented for both programmes.

Requirement: In the opinion of the Panel, formal class contact hours look very onerous for the MSc, particularly in Semester 1. The assessment load is also likely to be heavy. These should be reconsidered by the programme team.

2.5 Are the programme management structures adequate?

YES. A Course Board will be established in line with the Institute's Academic Quality System.

Recommendation Given the pace of change in the sector, the review cycle for these two programmes will need to be frequent. The annual programme monitoring process and module review/amendment processes can be used for this purpose. It is noted that the programme team has attempted to avoid over-specific technical terms or brands, so that the core module content will not date too quickly.

2.6 Are the resource requirements reasonable?

YES. A virtualisation lab has been built in conjunction with VMware which will give the department access to a cloud environment. These facilities which already exist in the department will be further enhanced by the development of other labs on a shared services basis with financial assistance from the companies involved. Notwithstanding these positive developments, it is noted by the Panel that the programme team and its industry partners acknowledge that these should not be seen primarily as EMC/VMware training programmes, but as fully developed major awards.

The Institute Executive Board has committed to redeveloping one of the existing labs into a lab of e-learning booths where the facilities can be booked by students.

2.7 Will the impact of the programme on the Institute be positive?

YES. The existing industry links will be strengthened as a result of the introduction of these programmes. Such partnerships are mutually beneficial and enhance the public profile of the Institute, as well as being a very good fit with CIT's strategic plan.

3. Programme Structure

The Panel notes that the programme structure has already been the subject of external peer evaluation and advice at an earlier QA stage.

The programme team justified the 60 credit model for the masters programme, but acknowledged that this is based on specialised entry requirements which are quite strict in terms of the prior qualifications and experience of applicants; essentially the applicants will need to hold the BSc (Hons) in Cloud Computing. The model here would be similar to the "3+2" masters which is common in Europe and which is found in the Department's Erasmus Mundus partnership.

Requirement: The specialised entry requirements for the masters programme should be spelt out explicitly in the documentation.

Requirement: While acknowledging that the Masters degree covers 60 credits of specialised material, the masters programme entry process must identify and take account of any educational deficits of entrants with Honours degrees in areas other than Cloud Computing.

4. Specific Modules

The Panel notes that many modules on the proposed programmes are pre-approved modules derived from related programmes in the CIT modular system. The Panel was also informed that the new draft modules have been the subject of internal and external scrutiny by the CIT Module Moderator and external reviewers.

In exercising its brief to consider the overall standard and appropriateness of modules, the Panel wishes to add the following observations:

Recommendation: The importance of project management and teamwork should be more evident in the content of the BSc (honours) degree. While teamwork is given a specific programme outcome, it is not strongly supported by the module learning outcomes. This needs to be addressed.

Recommendation: To underline the importance of teamwork and collaboration, some marks for relevant projects/assessments should be based on a student's interaction/collaboration with industry or with other students.

Recommendation: The BSc programme currently has free choice electives in both semesters. The panel recommends that one of these slots could be replaced with a dedicated teamwork/project management module.

It is noted that business aspects of cloud computing, including billing issues, are covered in the MSc module Cloud Strategy Planning & Management. The business case for implementing a cloud computing solution in a given enterprise is also dealt with in various other modules. The Panel was told that the highly important legal aspects and ethical issues will also be dealt with across various modules.

Recommendation: Check for adequate coverage of these issues in the indicative content, so that students will be aware of the issues and challenges that will face them in employment.

Recommendation: The project should deliver added value to the company involved. It is noted that a mentoring process already established with the industry partners. An identified member of staff from the industry partner is trained and will mentor the student on their work-based project.

BSc Modules

- Network Security – this approved module has been recently amended to include more cloud-specific content.
- Cloud Application Development – the scalability of the cloud is covered in this module and is complimented with relevant material in other modules.

MSc Modules

- Cloud Strategy Planning & Management – noted that this is the capstone business module for the programme.
- Managing Virtual Environments – disaster recovery is covered in the storage network areas. Also covered in the capstone business module.
- Research Project – the project is developed throughout semesters 1 and 2 with strong supervision.

5. Conclusions

The Panel recommends that the programmes be validated subject to implementation of the requirements above, and with due regard to the recommendations made. The Panel congratulates CIT and its industry partners EMC and VMWARE for this initiative.