Validation Report

Institute of Technology
Blanchardstown
Institiúid Teicneolaíochta
Baile Bhlainséir

BN116

Bachelor of Science (Honours) in Computing in Internet Applications

with the following embedded programmes

BN026

Higher Certificate in Science in Computing in Internet Applications

BN027

Bachelor of Science in Computing in Internet Applications

BN308

Bachelor of Science in Computing in Internet Applications

(Add on)

BN416

Bachelor of Science (Honours) in Computing in Internet Applications

(Add on)

Introduction

The mission of the Institute is to serve its students and the community by meeting the skills needs in the economy and increasing the level of participation in third-level education and training, particularly in Dublin North-West and its environs.

The Institute in 2006 was awarded delegated authority enabling the development, validation, implementation and continuous improvement of its existing taught higher education and training programmes up to and including level 9 of the National Framework of Qualifications.

The purpose of this document is to report on the findings of the peer review panel established to validate this proposed programme against the criteria for the validation of programmes as stipulated in the Institute policy document 2MP01[I].

This submission by the School of Informatics and Engineering in conjunction with the Centre for Interdepartmental Studies evolved through:

- examining the competence, expertise and experience of it's staff in addition to the strategy of the department/school/Institute and government educational policy

- identifying through research the need for and the preferred structure and characteristics of the proposed programme

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[I] 2MP01 Design, validation and accreditation of new academic programmes

Programme overview

The Bachelor of Science (Honours) in Computing in Internet Applications is a programme proposed to extend IT Blanchardstown's part time offering to meet the changing demands of the IT industry. This programme is designed to provide students with the knowledge and skills needed to pursue a career in information technology, offering specialisation in the following:

- Information Technology Support
- Computer Forensics
- Digital Media

The content of the original part time offering in Information Technology Support was developed in the late 1990's as part of the Accelerated Technician Programmes (ATP's), a consortium programme compiled by the thirteen Institutes of Technology and Tipperary Institute[I]. This programme was reviewed in 2005 and currently offers the following content:

- Software development
- Databases
- Networking
- Operating systems & computer systems
- Mathematics
- Technical communications and management
- Project

Review of the above programme content and structure has been informed by the Institute's Strategic Plan, consultation with local industries including, Intel Ireland Limited, IBM and Eirplay to name a few, as well as the forecasted skills needs for the IT sector as identified by Forfás[II].

Computer Forensics

In light of the exponential increase in network security issues in recent years a Computer Forensics stream was developed consisting of the following modules:

Hardware and Software Forensics

This module covers the fundamental basics of computer security vulnerabilities in both hardware and software while also developing the

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[I] Previously TRBDI - Tipperary Rural and Business Development Institute
[II] International Digital Media Industry: Implications for Ireland, Forfás, July 2006

student's ability to find and recover user activity from the implementation and operation of computer forensics applications.

Network Security

This module covers the fundamental basics of computer network security planning, implementation and network security vulnerabilities. It also serves to develop a student's skills in the testing of a network's security using penetration testing methodologies while also developing their ability in the implementation and operation of a secure network system.

Computer Forensics Investigation

This module introduces the student to the emerging field of study and practice in computer forensics investigation. This involves the study of the prevention, detection, apprehension and the legal route to prosecution of cyber security violators and cyber criminals.

Digital Media

The Digital Media stream has been developed in recognition of the skills roadmap laid for this sector by Forfás[I] in 2006[II].

Digital technology has made significant strides in recent years and the impact of this has not only transformed how traditional media is produced, delivered and consumed but also led to the adoption of new media formats.

This stream allows the student to focus on high quality programming skills with a strong emphasis on digital media and related technologies, preparing the graduate for content creation and production roles. Graduates of this programme would have the knowledge and skills to take up employment in a broad number of areas within the digital media industry including:

- Web design and administration
- Interactive media production
- 2D/3D animation
- Instructional media design

The purpose of this proposed, revised programme is to allow for a more flexible, modular part time offering in recognition of the changing face of third level education in Ireland.

[I] Ireland's national policy and advisory board for enterprise, trade, science, technology and innovation. It operates under the auspices of the Department of Enterprise, Trade and Employment.
[II] International Digital Media Industry: Implications for Ireland, Forfás, July 2006.

Programme detail

Programme title	Bachelor of Science (Honours) in Computing in Internet Applications
Award title	Bachelor of Science (Honours)
NFQ[I] level	8
ECTS[II] credits	240
Programme code	BN116
Banner code	BN_KCIIA_8

Embedded awards

Banner code	ITB code	Programme title	Award title	ECTS credits	Format
BN_KCIIA_7	BN027	Bachelor of Science in Computing in Internet Applications	Bachelor of Science	Level 7 180 credits	Ab initio
BN_KCIIA_C	BN026	Higher Certificate in Science in Computing in Internet Applications	Higher Certificate	Level 6 120 credits	Ab initio
BN_KCIIA_D	BN308	Bachelor of Science in Computing in Internet Applications	Bachelor of Science	Level 7 60 credits	Add on
BN_KCIIA _B	BN416	Bachelor of Science (Honours) in Computing in Internet Applications	Bachelor of Science (Honours)	Level 8 60 credits	Add on

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[I] National Framework of Qualifications
[II] European Credit Transfer and Accumulation System

Panel members

Chairperson	Mr. Tony Quinlan An Chéim
Panel member 1	Dr. Mícheál Ó hÉigeartaigh Waterford Institute of Technology
Panel member 2	Ms. Ita Kavanagh Limerick Institute of Technology
Panel member 3	Mr. Stephen Burke IBM
In attendance	Dr. Diarmuid O'Callaghan Institute of Technology Blanchardstown Mr. Michael Keane Institute of Technology Blanchardstown
Date of Panel Meeting	Wednesday 7th May 2008

Institute staff present

Session I   Head of School, Head of Department & Programme Leader(s)

Mr. Larry McNutt   Head of School of Informatics & Engineering

Dr. Brian Nolan   Head of Department of Informatics

Ms. Geraldine Gray   Department of Informatics

Mr. Tom Nolan   Department of Informatics

Session II   Meeting with programme design staff

Mr. Larry McNutt	Dr. Brian Nolan
Mr. Tom Nolan	Ms. Geraldine Gray
Dr. Matt Smith	Dr. Anthony Keane
Ms. Margaret Kinsella	Mr. Daniel McSweeney
Mr. Stephen Sheridan	Dr. Simon McLoughlin
Mr. Mark Cummins	Mr. Michael O'Donnell
Mr. Kevin Farrell	Ms. Orla McMahon

Panel findings

The panel commended the effort undertaken to develop a more flexible, modular part time offering in recognition of the changing face of third level education in Ireland. The panel were cognisant of the operational requirements in the management of such a wide range of electives in the major thematic areas of the proposed programme. The panel felt, however, that the aspirations of the proposed programme would best be served if it could be split into two separate Bachelor of Science offerings. The first being an amalgamation of the IT Support and Computer Forensic streams from the original proposal while keeping the Digital Media stream as a separate offering.

The panel discussed this in detail with both the Head of School and the Head of the Department of Informatics whereby it was agreed that the validation would ratify two separate programmes each with a core suite of mandatory modules coupled with defined modules from each thematic area of specialisation. The first programme being in the area of IT Support and Computer Forensics, including embedded awards, with a title as deemed appropriate by the programme development team. The second in the area of Digital Media and Entertainment Systems, including embedded awards, again with a title as deemed appropriate by the programme development team.

Programme detail (1)

Programme title	Bachelor of Science (Honours) in Computer Forensics and Systems Management♣
Award title	Bachelor of Science (Honours)
NFQ^I level	8
ECTS^{II} credits	240
Programme code	BN116
Banner code	BN_KCFSM_8

Embedded awards

Banner code	ITB code	Programme title	Award title	ECTS credits	Format
BN_KCFSM_7	BN027	Bachelor of Science in Computer Forensics and Systems Management♣	Bachelor of Science	Level 7 180 credits	Ab initio
BN_KCFSM_C	BN026	Higher Certificate in Science in Computer Systems Management♣	Higher Certificate	Level 6 120 credits	Ab initio
BN_KCFSM_D	BN308	Bachelor of Science in Computer Forensics and Systems Management♣	Bachelor of Science	Level 7 60 credits	Add on
BN_KCFSM _B	BN416	Bachelor of Science (Honours) in Computer Forensics and Systems Management♣	Bachelor of Science (Honours)	Level 8 60 credits	Add on

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♣ Programme title subject to consideration and recommendation by the programme development team.
^I National Framework of Qualifications
^{II} European Credit Transfer and Accumulation System

Programme detail (2)

Programme title   Bachelor of Science (Honours) in Digital Media
                             and Entertainment Systems∗

Award title   Bachelor of Science (Honours)

NFQ^I level   8

ECTS^{II} credits   240

Programme code   BN117

Banner code   BN_KDMES_8

Embedded awards

Banner code	ITB code	Programme title	Award title	ECTS credits	Format
BN_KDMES_7	BN029	Bachelor of Science in Digital Media and Entertainment Systems∗	Bachelor of Science	Level 7 180 credits	Ab initio
BN_KDMES_C	BN028	Higher Certificate in Science in Digital Media and Entertainment Systems∗	Higher Certificate in Science	Level 6 120 credits	Ab initio
BN_KDMES_D	BN309	Bachelor of Science in Digital Media and Entertainment Systems∗	Bachelor of Science	Level 7 60 credits	Add on
BN_KDMES _B	BN417	Bachelor of Science (Honours) in Digital Media and Entertainment Systems∗	Bachelor of Science (Honours)	Level 8 60 credits	Add on

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∗ Programme title subject to consideration and recommendation by the programme development team.
^I National Framework of Qualifications
^{II} European Credit Transfer and Accumulation System

<u>Section I</u>

In evaluating the appropriateness, quality and proposed operation of these programmes the following criteria has been considered and is hereby reported upon:

Strategic planning

The panel was satisfied that the proposed programmes are in keeping with the Institute's mission, that they do not constitute redundant provision and that they make efficient use of resources.

Evidence of consultation

Through discussion with Institute staff, the panel found that a comprehensive research effort was undertaken to validate the need for, and the proposed structure and characteristics of the programmes.

Rationale

Following on from Programmatic Review which took place in 2005 it was decided to review the existing offering of consortium programmes. Two additional areas of specialisation were proposed namely:

- Computer Forensics
- Digital Media

Rationale for Computer Forensics

The domain of computer security and forensics is growing and has become more essential than ever before. Virtually all organisations now need and use internet technologies (email, the web, ecommerce) in their daily business. With this growth comes the need to protect sensitive electronic data. Qualified and experienced personnel are in demand within the information technology sector to fulfil these roles.

According to the results of "The ISSA/UCD Irish Cybercrime Survey 2006: The Impact of Cybercrime on Irish Organisations" report, Irish organisations are significantly affected by cybercrime where virtually all (98%) of respondents indicated that they had experienced some form of cybercrime with losses of productivity and data.

The Chief Executive of the Irish Computer Society (ICS), Jim Friars, has been quoted as saying that security is not just an information technology problem but a corporate governance issue and is especially true in regard to mobile and home workers.

Rationale for Digital Media

Ireland is home to a fast-growing and innovative digital media sector that encompasses a broad range of activities including content creation, systems development and service provision. The impact of digital technology has transformed traditional information technology, media and entertainment industries resulting in new ways of working, new products and services and new business opportunities.

Government research publications based on industry consultation have stressed the importance of digital media as a key area for future economic development. Skill shortages have been identified in the areas of "creativity, high-end content specific skills and digital content related business skills"[I].

The purpose of these proposed programmes is to allow for a more flexible, modular part time offering in recognition of the changing face of third level education in Ireland while taking strides to address identified skill shortages within both computer forensics and digital media.

Learner employment potential

It is envisaged that graduates will have the knowledge and skills to take up employment in a broad number of areas including information technology support, network security, web design and administration, animation and many more.

Protection of learners

Section 43 of the Act[II] does not apply.

[I] A Strategy for the Digital Content Industry – Forfás 2002
[II] Qualifications (Education and Training) Act, 1999

Quality assurance

The panel were informed of how the submission had been developed and approved internally whilst complying with the Institute's quality assurance policies and procedures. The panel concurred that said policies and procedures had been applied to the development of the proposed programmes.

Programme titles and award titles

Following discussion, the panel was satisfied that the titles of the proposed programmes, and their embedded sub-awards in the context of IT Support and Computer Forensics in the first instance and Digital Media and Entertainment Systems in the second are clear, accurate and fit for the purpose of informing prospective learners and other stakeholders and consistent with HETAC[I] award titles. The panel noted, however, that the programme design team are to consider the precise wording of the programmes titles.

Ethics

The panel was satisfied that the Institute has internal policies and procedures in place to ensure that all teaching, learning or research activity across the spectrum of NFQ levels is conducted / delivered in a manner that is both morally and professionally ethical.

[I] Higher Education and Training Awards Council

<u>**Section II**</u>

In evaluating these programmes the following specific aspects have been considered and are hereby reported upon:

Unity

The panel found that the design each programme is consistent with HETAC's policy on Accumulation of Credits and Certification of Subjects, that they have an underlying unifying theme with modules bonded by linkages being either implicit or explicit. It was also clear to the panel how the standards of knowledge, skill and competence evolve throughout the programmes as a whole.

Teaching and learning

The panel discussed with staff of the Institute the various modes of interaction practised with learners. Evidence of a clear dialogue was confirmed, enabling learners to develop and have available to them the support of academic staff.

The panel heard how lectures, individual and group workshop exercises, tutorials and project work pertinent to each module will be delivered in a structured manner. Each module introducing the students to the fundamental concepts of the subject area with instruction then advancing to an appropriate level to cover in-depth knowledge, fostering the development of individual aptitudes and where relevant developing team working skills in the respective areas.

Course management arrangements were discussed and deemed adequate, these included:

> ➢ survey of students by lecturer
> ➢ summary of survey of students by lecturer
> ➢ survey of students by department
> ➢ course boards

The panel was satisfied with the proposed resource plan for the necessary staffing levels and were suitably impressed with the qualifications, experience and commended the obvious enthusiasm of the staff concerned.

Minimum entry requirements

Entry requirements as discussed at the panel meeting for admission to the programmes were deemed appropriate. However the panel recommended that the submission document be reviewed to ensure that the content is in line with Institute Policy.

Learner assessment

Through discussion with the design team, and from the submission document itself it was explained in detail to the panel the multiple modes of assessment, both formal and informal that will be employed. These included a combination of in-class tests, formal examinations, assignments, reports, projects, presentations and seminars. The scale of learner assessment was deemed appropriate for the proposed programmes.

Standards of knowledge, skill and competence

The panel felt having reviewed the syllabi and assessment methods for the proposed programmes that learners would be capable of attaining the standards of knowledge, skill or competence relevant for these awards.

Access, transfer and progression

The proposed programmes incorporate the established procedures for access, transfer and progression while accommodating a variety of access and entry requirements from applicants with expertise related disciplines.

Panel decision

The panel recommended the validation of the following programmes and their embedded awards:

Programme title	Bachelor of Science (Honours) in Computer Forensics and Systems Management♣
Award title	Bachelor of Science (Honours)
NFQ[I] level	8
ECTS[II] credits	240
Programme code	BN116
Banner code	BN_KCFSM_8

Embedded awards

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♣ Programme title subject to consideration and recommendation by the programme development team
[I] National Framework of Qualifications
[II] European Credit Transfer and Accumulation System

Programme title   Bachelor of Science (Honours) in Digital Media and Entertainment Systems✲

Award title   Bachelor of Science (Honours)

NFQ[I] level   8

ECTS[II] credits   240

Programme code   BN117

Banner code   BN_KDMES_8

Embedded awards

Banner code	ITB code	Programme title	Award title	ECTS credits	Format
BN_KDMES_7	BN029	Bachelor of Science in Digital Media and Entertainment Systems✲	Bachelor of Science	Level 7 180 credits	Ab initio
BN_KDMES_C	BN028	Higher Certificate in Science in Digital Media and Entertainment Systems✲	Higher Certificate in Science	Level 6 120 credits	Ab initio
BN_KDMES_D	BN309	Bachelor of Science in Digital Media and Entertainment Systems✲	Bachelor of Science	Level 7 60 credits	Add on
BN_KDMES _B	BN417	Bachelor of Science (Honours) in Digital Media and Entertainment Systems✲	Bachelor of Science (Honours)	Level 8 60 credits	Add on

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✲ Programme title subject to consideration and recommendation by the programme development team
[I] National Framework of Qualifications
[II] European Credit Transfer and Accumulation System

Panel Condition

This validation is subject to the following condition:

The panel requested that the original proposed programme be split into two separate Bachelor of Science offerings each with a core suite of mandatory modules coupled with defined modules from each thematic area of specialisation with a consequential reduction in the number of necessary pre-requisites for individual modules. The first programme being in the area of IT Support and Computer Forensics, including embedded awards, with a title as deemed appropriate by the programme development team. The second in the area of Digital Media and Entertainment Systems, including embedded awards, again with a title as deemed appropriate by the programme development team.

Panel recommendations

The following specific recommendations were made:

1) Review the assessment strategy for the programme Bachelor of Science (Honours) in Computer Forensics and Systems Management reducing the number of final written exams.

2) Increase within both programmes the emphasis of innovation and entrepreneurship skills where possible.

3) Consider within both programmes the inclusion of a "Teaching and Learning Skills" module given the target part time student cohort.

4) Articulate support strategies for modules with a high Mathematics content.

5) Include curriculum vitae production as a deliverable within the module "Interpersonal Communications and PC Applications" and amend the assessment of this module to 100% continuous assessment removing the final written exam.

6) Review the minimum entry requirements to ensure that they are in line with Institute policy.

7) Review the module syllabi to ensure that no pre-requisites exist between sequential odd and even semesters.

8) Make other minor amendments as discussed at panel meeting.

Panel observations

The panel commended the design team on what they found to be a comprehensive, innovative, and well structured submission document. They concurred on the wide range of skills a graduate of these programmes seeking employment would require and felt that these were well reflected in the programmes. The panel also commended the willingness of Institute staff present to engage in open and frank dialog through which their obvious enthusiasm for the new programmes became evident.

Panel signatures

Chairperson

Mr. Tony Quinlan   _____   Date _____

Secretary

Dr. Diarmuid O'Callaghan _____   Date _____