

National College of Ireland



Consolidated Report to QQI
Programmatic Review
School of Computing
May 2015

1 Panel Report

**National College of Ireland
Programmatic Review
School of Computing
Expert Panel Report**

18th- 20th March 2015

**Overall Review Chair: Mr Gerard O'Donovan, Cork IT
Chair Computing Programmes: Mr David Denieffe,
Registrar, IT Carlow**

1.1 Introduction

Based in the IFSC, Dublin, the National College of Ireland (NCI) has two schools – Business and Computing. Both schools provide a range of education programmes which are validated by QQI from level 5 to level 10 on the National Framework of Qualifications. The College has a diverse learner profile of approximately 3,500 learners. Of these, approximately 50% are part-time. The entire portfolio of NCI is under review during the academic year 2014-15. This process is the second of 3 programmatic review events to be held. The 1st event was held in December 2014 which considered postgraduate programmes in the School of Business. A third event is planned for September 2015 which will consider outstanding programmes in the School of Business.

The programmes submission documents and the programme teams' self-evaluation of the programmes were made available to the panel members across the 3 days of the event.

1.1.1 Context

This validation process was undertaken under the revalidation (programmatic review) process as outlined in QQI's HET Core Validation Criteria & Policy, 2013. The terms of reference and composition of expert panels were proposed by NCI and approved by QQI.

The review of the School of Computing programmes was originally scheduled to take place in January 2015. This was postponed with the agreement of QQI as, in December 2014, a member of School of Computing faculty raised concerns regarding academic standards in the School of Computing. As a result, the Vice President commissioned an external review of standards within the School. This was undertaken by Professor Wallace Ewart and Professor Kevin Ryan during January 2015. The report of this review was provided to the panel as part of the self evaluation document.

As well as validation documents for each award, panel members were provided with a Self Evaluation report which outlined College governance and management structures in addition to the strategic plan. An overview of programme provision at NCI was presented in order to provide background and context for the current review. In addition College level policies in relation to learning and teaching, research activities and quality assurance were presented.

The programmatic review process as it specifically related to both Schools was described and a summary of the detailed changes proposed by the Programme Teams in relation to each of the programmes under consideration.

Additional detail of quality assurance processes was provided to the panel on request and as required during the event.

The review event took place during 18th-20th March 2015 over a series of meetings at NCI's premises in the IFSC.

A representative of the Quality Assurance & Statistical Services (QASS) Office co-ordinated provision of submission documentation and the validation event as well as providing administrative support to the panel. This representative was not a member of the panel nor did she take part in the deliberations of the panel.

The QASS office acted as liaison between the panel and the programme team members in relation to the issuing of the panel's report and the programme team's response to that report.

This report is the agreed report of the panel members.

1.2 Terms of Reference

1. Analyse the effectiveness and efficiency of each validated programme, including detail of learner numbers, graduate attainment of standards, retention rates and success rates
2. Review the development of the programmes in the context of the requirements of employers, industry, professional bodies, the Irish economy and international developments
3. Evaluate the response of the provider/school/department to market requirements and educational developments
4. Evaluate the feedback mechanisms for learners and the processes for acting on this feedback
5. Evaluate the physical facilities and resources provided for the provision of the programme(s)
6. Evaluate the formal links which have been established with industry, business and the wider community in order to maintain the relevance of its programmes
7. Evaluate projections for the following five years in the programme(s)/field of learning under review

1.2.1 Specific Considerations for NCI

At a College level,

- The role and function of the programme director should be agreed¹
- The timing of repeat assessment should be considered

Programme teams should

- Evaluate whether the programme should be retained based on its recruitment and consistency with the College's strategic direction
- Evaluate the programme learning outcomes in the context of feedback from stakeholder engagement
- Consider any amendments made at the last programmatic review and evaluate their effectiveness or otherwise
- Ensure that the objectives of the learning, teaching & assessment strategy are met for each programme as appropriate
- Ensure that any recommendations from Service Reviews (Library, Student Support, Assessment) are fully embedded in programmes
- Consider programme and module assessment regulations and the nature and timing of repeat assessment
- Consider expanding opportunities for sharing modules across schools
- Expand the use of technology to support teaching and assessment
- Opportunities for learners to participate in exchange programmes with current partners (Anjers, Saxion, etc)
- The review will also address progression pathways within and between programmes including, if appropriate, options in first year to allow students to experience a range of modules from different programmes and to make informed choices on their path to award.
- Evaluate the impact that any amendment to programmes will have on existing articulation agreements with partners

¹ This refers mainly to the management of undergraduate programmes

- Evaluate the impact that any amendment to a programme will have on current professional body recognition or exemption or potential for future recognition or exemption
- Ensure that QQI policy and criteria for validation (2013) and Assessment & Standards (2010) are considered for all programmes.
- Consider timescale for implementation and any transitioning of currently enrolled learners that should take place

This report presents the findings of the combined panels over the visit period. The report first looks at the resources and structures to support the programmes and then presents a detailed report on each programme evaluated.

Overall Review

PROVIDER	National College of Ireland
DATE OF VISIT	18 th March 2015
AREAS(S) EVALUATED	Resourcing, Quality Assurance, Research, Learning & Teaching
PANEL OF EXPERTS	Mr Gerard O'Donovan, Head of Faculty of Business & Humanities, Cork IT (<i>Chair</i>) Dr Tara Ryan, Education Partnerships/Student Services Manager, IADT Ms Fiona O'Riordan, Head of Teaching Excellence, Griffith College Mr David Denieffe, Registrar, IT Carlow Mr Emmet Hughes, Graduate /Vice President NCISU

In attendance: Ms Aoife Cassidy, EA to Registrar, (*Rapporteur*)

1.3 Summary

This meeting took place in the context of a series of programmatic review events being held at NCI. Members of the panel had visited the College in December and held a similar meeting which focussed on postgraduate activity in the School of Business. This meeting focussed on QA, resourcing, learning & teaching and research of the School of Computing and undergraduate programmes of the School of Business. The documentation provided to the panel before and during the panel was comprehensive and the panel commends the College for their transparency. The panel also met with students and graduates of the programmes who indicated satisfaction with staff, facilities, programme content and delivery and central support services.

1.4 College Strategy & Resources

The President outlined the College strategy over the last 5 years which has been one of major growth in student numbers both at postgraduate level and in the number of international students. A large number of postgraduate programmes in both Schools have been validated since the last programmatic review and the College sees its next phase as one of consolidation and incremental growth. The growth of labour market activation schemes has contributed to significant growth in the School of Computing.

1.5 Research

The panel explored the place of research at NCI and how research students can engage in a community of learning. The documentation relating to Research and QA standards is comprehensive and cross referencing aspects of it to Taught programmes in relation to supervision and ethics would be useful. Clarity around the exit awards available to PhD students would also be helpful. Support to new supervisors was also discussed.

1.6 Learning, Teaching & Assessment

The panel commended the College on its Learning, Teaching & Assessment Strategy and explored areas of staff support, blended learning, choice of assessment strategy, block delivery and mandatory attendance.

1.7 Facilities and Support Services

Members of the panel had met with representatives from the Student Support, IT, International Office, School Administration Office and Library staff in December and as a result did not need to meet with them again.

1.8 Quality Assurance

The panel heard about the process of the programmatic review used in each School. Each programme team and individual lecturer was involved as were the administration staff who fed back outcomes from Class Representative meetings and programme team meetings. New programme development initiates from many levels – senior management, programme committee or individuals and that development process is managed through the QA office as are formal student evaluation surveys.

The challenges of collaborative provision were explored with the QA staff and representatives from the Professional Education & Training department.

The panel is happy that the QA Handbook is comprehensive and the information provided is transparent.

The panel also notes the thorough investigation that had taken place into academic standards in the School of Computing by Prof Wallace Ewart and Prof Kevin Ryan and supports the recommendations of the report to ensure the highest quality for the College and the learners.

1.9 Conclusion

1.9.1 Commendations

1. Local engagement and encouraging access to education with those in disadvantaged areas
2. Quality of documentation presented very well done
3. Student feedback very positive on programme satisfaction and staff student interaction
4. Strong entrepreneurial spirit evident
5. Significant programme development matched with strong learner support
6. Strong professional accreditation e.g. CIPD and links with industry e.g. Laya Healthcare
7. Great innovation in creating distinguished teaching award, Presidents award for assessment innovation, Presidents award for outstanding contribution to student learning
8. Advancement of online strategy with dedicated learning pods
9. Cohesiveness amongst the areas of learner support is commendable and the panel can see the benefits for the learner based on this collaborative approach e.g. Learner support for teaching and learning now front of house

1.9.2 Conditions

- C1. Constructively align a grid of assessment linked to learning outcomes at programme level –with consideration of optimum quantity and variety of assessment in light of refined learning outcomes.

1.9.3 Recommendations

1.9.3.1 *Quality Assurance*

1. Revisit programme director roles and duties to ensure coherence across full-time and part-time programmes
2. Be consistent and explicit in relation to entry requirements for programmes
3. Expand rationale for block release where used and how is this integrated across modules
4. Formalise new lecturer induction and requirements for use of technology e.g. Moodle
5. Opportunities to look at professional accreditation in computing programmes
6. Formalise advisory panels across programmes
7. Recommend good practice for retention as outlined by computing and replicate across the College

1.9.3.2 *Research*

Recommendations

1. Recommend research metrics as outputs and also detail current research activity in more depth
2. Narrow cluster focus to enhance current strengths and competences
3. Formalise research partners in cluster areas to take advantage of funding opportunities

1.9.3.3 *Teaching, Learning and Assessment*

Recommendations

1. Ensure the programme classifications are aligned to relevant award standards
2. Consider group work through an assessment centre day
3. Ensure consistency in module requirements for attendance and assessment across the institute

1.9.3.4 *Student Stakeholder Feedback Session:*

1. Students very positive in relation to programme content , staff delivery and interaction, learning support and NCI preparing them for their careers in the future
2. Research Methods module did not prepare them adequately for Dissertation
3. Career Development Seminars were very useful and should be re-introduced
4. U-tube videos in-house very beneficial for learning
5. Finance issue in relation to fees not paid with access to Moodle restricted, not student friendly
6. Review admission procedures to ensure offers are made timely
7. For modules where case studies are given in the exam, might be useful to give in advance

1.9.4 Overall recommendations for the School of Computing

These recommendations were made by the panel that evaluated the School of Computing programmes on the 19th March. Conditions and recommendations specific to each programme reviewed are documented in each programme report.

- R1.Documentation should be reviewed to ensure that learning resources are current for all modules
- R2.The involvement of the School of Computing in external QA should be documented
- R3.Document how conflicts are resolved in the interdisciplinary team projects
- R4.Describe how virtual programme team management is being used within the document and promote this across the School and College

- R5. Encourage learners to use e-portfolio so that their learning can be demonstrated in their professional life
- R6. Make the use of Social Media more explicit in the programmes
- R7. Build on leadership skills from level 6 to level 8
- R8. Work in the Community and leadership should be promoted

The panel also notes the thorough investigation that had taken place into academic standards in the School of Computing by Prof Wallace Ewart and Prof Kevin Ryan and supports the recommendations of the report to ensure the highest quality for the College and the learners.

1.10 Certificate in Web Design

1.10.1 Details of Validation Event

PROVIDER	National College of Ireland
DATE OF VISIT	19 th March 2015
PROGRAMME(S) EVALUATED	Certificate in Web Design
PROGRAMME (S) RECOMMENDED FOR APPROVAL	Certificate in Web Design
PANEL OF EXPERTS	<p>Chair: David Denieffe Registrar, IT Carlow</p> <p>Subject Matter Experts Dr Gaye Kiely, College Lecturer, UCC Dr Christian Horn, Head of Dept of Computing, Dundalk, IT Ms Shruthi Chindalur, Head of EMEA Sales Development at LinkedIn</p> <p><i>In Attendance: Ms Louise Devlin, School of Computing (Rapporteur)</i></p>

1.10.2 Summary

The Expert Panel, having reviewed the documentation presented by NCI and considered the responses of the programme team during the course of the site visit; recommend approval of the following programme

Certificate in Web Design
With commendations & one (1) recommendations

1.10.3 Examination of Programmes

The panel met with staff of NCI involved in the design of the programme, to examine the programme submission against the criteria for the validation of programmes as stipulated by the QQI board. In this regard, the QQI's *Core Validation Policy and Criteria, 2010, revised 2013* was used by the Panel. The panel heard that this programme was originally validated in 201 was presented with extensive and comprehensive documentation outlining proposed amendments arising from programmatic review.

1.10.3.1 Development and publication of explicit intended learning outcomes

The programme submission documents, together with the outcome of discussions with NCI staff articulated the target learners' prerequisite learning and any other relevant assumptions about programme participants. The panel is satisfied that the programme learning outcomes are appropriate to the level and were designed using QQI's award standards for Computing at level 6 of the National Framework of Qualifications.

1.10.3.2 Programme content, design and learning environment

The Panel was satisfied that the programme is coherent and fit for its stated purpose. The programme content and learning environment are appropriate to the programmes intended learning outcomes and that the module learning outcomes are aligned to the programme learning outcomes. The programme team that the panel met is competent to enable learners to achieve the intended programme learning outcomes and to assess their achievements, in accordance with QQI's *Assessment and Standards 2013*. The panel is satisfied that the School of Computing has sufficient resources within its current full-time and associate faculty to appropriately resource the programme.

Members of the programmatic review panel visited the College library which also houses Assistive Technology resources for learners, teaching spaces, hardware lab and the Cloud Competency Centre and is satisfied that these resources are appropriate to these programme and learner population.

Comment on Programme Modules

Each module was reviewed individually and subject to the following commentary in relation to specific modules were found to have appropriate learning outcomes, indicative content and assessment strategies

1.10.3.3 Enabling the achievement of the intended programme learning outcomes

The panel is satisfied that learners will be able to meet the programme learning outcomes using the delivery mechanisms and patterns as described by the programme team.

1.10.3.4 Actions and procedures for access, transfer and progression for learners

The Panel was satisfied that the procedures for access, transfer and progression are consistent with national policy.

The panel is satisfied that the programme's use of *ECTS* (credit) and provisions for Recognition of Prior Learning (RPL) is consistent with QQI's *Assessment and Standards 2013* and with relevant national policy including:

- i. NQAI's *Principles and Operational Guidelines for the Implementation of a National Approach to Credit in Irish Higher Education and Training 2006*
- ii. NQAI's *Principles and Operational Guidelines for the Recognition of Prior Learning in Further and Higher Education and Training 2005*

1.10.3.5 Education and training needs

The panel is satisfied that this programme satisfies a current need in the Irish education market..

1.10.3.6 Programme viability

The Panel was satisfied that the programme is consistent with the provider's mission and strategy. The panel heard the projections for student intake over the next 5 year period.

1.10.3.7 Learner Protection

NCI's policy is that once a programme has commenced, the programme will be completed for all learners enrolled. It is National College of Ireland's policy that, should a programme commence, it will be offered to completion for the specific intake of learners. The College is committed to the provision of this programme. As a member of the Dublin Pillar II Cluster, NCI has agreement from Dublin City University and Maynooth University to provide Learner Protection. Learners may transfer to an appropriate DCU or Maynooth University programme. In the case where the programme does not have an appropriate transfer option DCU or Maynooth University will complete out the QQI award using NCI faculty and premises. NCI has agreement in principle from QQI and is currently working with QQI on finalising the arrangement of these provisions'

1.10.3.8 Assessment of learners

The panel is satisfied that the learners will be appropriately assessed and underpins the achievement of the relevant standard of knowledge, skill and competence.

1.10.3.9 Quality Assurance Arrangements

The panel is satisfied that NCI has appropriate quality assurance arrangements in place and that no new quality assurance arrangements are required for these programmes. The documentation submitted demonstrated that the programme development followed rigorous institutional quality assurance to ensure that it conforms with strategy, stakeholders had been consulted with, had clearly identified resource requirements, and had undergone internal review prior to submission.

1.10.3.10 Ethics

It is expected that providers will have procedures in place to ensure that any teaching and learning or research activity at any level shall be conducted in a manner that is morally and professionally ethical. The panel was satisfied that this requirement has been met in respect of the proposed programmes.

1.10.3.11 Programme Titles and Award Titles

The Panel heard the rationale for the programme title and is satisfied that the programme title and award as proposed as being appropriate and consistent with QQI policy for the naming of awards.

1.10.4 RECOMMENDATION/COMMENT

FOR THE ATTENTION OF THE ACADEMIC COMMITTEE

The panel of experts recommend the revalidation of the following programmes:

NFQ Level	<i>Level 6</i>
Programme Title	<i>Certificate in Web Design</i>
ECTS	<i>30 ECTS</i>
Award Type	<i>Minor Award in association with BSc (Hons) in Computing</i>

Subject to:

Council's general conditions of approval

1.10.4.1 Commendations

- The programme is to be commended for its online delivery, employability and the enthusiasm of the programme director.

1.10.4.2 Conditions

none

1.10.4.3 Recommendations

R1 .Remove reference to Systems Analyst as a graduate profile for this programme

Higher Certificate in Computing Applications & Support

1.10.5 Details of Validation Event

PROVIDER	National College of Ireland
DATE OF VISIT	19 th March 2015
PROGRAMME(S) EVALUATED	Higher Certificate in Computing Applications & Support
PROGRAMME (S) RECOMMENDED FOR APPROVAL	Higher Certificate in Computing Applications & Support
PANEL OF EXPERTS	<p>Chair: David Denieffe Registrar, IT Carlow</p> <p>Subject Matter Experts Dr Gaye Kiely, College Lecturer, UCC Dr Christian Horn, Head of Dept of Computing, Dundalk, IT Ms Shruthi Chindalur, Head of EMEA Sales Development at LinkedIn</p> <p><i>In Attendance: Ms Louise Devlin, School of Computing (Rapporteur)</i></p>

1.10.6 Summary

The Expert Panel, having reviewed the documentation presented by NCI and considered the responses of the programme team during the course of the site visit; recommend approval of the following programme

Higher Certificate in Computing Applications & Support

With one (1) conditions & three (3) recommendations

1.10.7 Examination of Programmes

The panel met with staff of NCI involved in the design of the programme, to examine the programme submission against the criteria for the validation of programmes as stipulated by the QQI board. In this regard, the QQI's *Core Validation Policy and Criteria, 2010, revised 2013* was used by the Panel. The panel heard that this programme was originally validated in 201 was presented with extensive and comprehensive documentation outlining proposed amendments arising from programmatic review.

1.10.7.1 Development and publication of explicit intended learning outcomes

The programme submission documents, together with the outcome of discussions with NCI staff articulated the target learners' prerequisite learning and any other relevant assumptions about programme participants. The panel is satisfied that the programme learning outcomes are appropriate to the level and were designed using QQI's award standards for Computing at level 6 of the National Framework of Qualifications.

1.10.7.2 Programme content, design and learning environment

The Panel was satisfied that the programme is coherent and fit for its stated purpose. The programme content and learning environment are appropriate to the programmes intended learning outcomes and that the module learning outcomes are aligned to the programme learning outcomes. The programme team that the panel met is competent to enable learners to achieve the intended programme learning outcomes and to assess their achievements, in accordance with QQI's *Assessment and Standards 2013*. The panel is satisfied that the School of Computing has sufficient resources within its current full-time and associate faculty to appropriately resource the programme.

Members of the programmatic review panel visited the College library which also houses Assistive Technology resources for learners, teaching spaces, hardware lab and the Cloud Competency Centre and is satisfied that these resources are appropriate to these programme and learner population.

Comment on Programme Modules

Each module was reviewed individually and subject to the following commentary in relation to specific modules were found to have appropriate learning outcomes, indicative content and assessment strategies

1.10.7.3 Enabling the achievement of the intended programme learning outcomes

The panel is satisfied that learners will be able to meet the programme learning outcomes using the delivery mechanisms and patterns as described by the programme team.

1.10.7.4 Actions and procedures for access, transfer and progression for learners

The Panel was satisfied that the procedures for access, transfer and progression are consistent with national policy.

The panel is satisfied that the programme's use of *ECTS* (credit) and provisions for Recognition of Prior Learning (RPL) is consistent with QQI's *Assessment and Standards 2013* and with relevant national policy including:

- iii. NQAI's *Principles and Operational Guidelines for the Implementation of a National Approach to Credit in Irish Higher Education and Training 2006*
- iv. NQAI's *Principles and Operational Guidelines for the Recognition of Prior Learning in Further and Higher Education and Training 2005*

1.10.7.5 Education and training needs

The panel is satisfied that this programme satisfies a current need in the Irish education market..

1.10.7.6 Programme viability

The Panel was satisfied that the programme is consistent with the provider's mission and strategy. The panel heard the projections for student intake over the next 5 year period.

1.10.7.7 Learner Protection

NCI's policy is that once a programme has commenced, the programme will be completed for all learners enrolled. It is National College of Ireland's policy that, should a programme commence, it will be offered to completion for the specific intake of learners. The College is committed to the provision of this programme. As a member of the Dublin Pillar II Cluster, NCI has agreement from Dublin City University and Maynooth University to provide Learner Protection. Learners may transfer to an appropriate DCU or Maynooth University programme. In the case where the programme does not have an appropriate transfer option DCU or Maynooth University will complete out the QQI award using NCI faculty and premises. NCI has agreement in principle from QQI and is currently working with QQI on finalising the arrangement of these provisions'

1.10.7.8 Assessment of learners

The panel is satisfied that the learners will be appropriately assessed and underpins the achievement of the relevant standard of knowledge, skill and competence. Greater use could be made of integrated assessment across the programme.

1.10.7.9 Quality Assurance Arrangements

The panel is satisfied that NCI has appropriate quality assurance arrangements in place and that no new quality assurance arrangements are required for these programmes. The documentation submitted demonstrated that the programme development followed rigorous institutional quality assurance to ensure that it conforms with strategy, stakeholders had been consulted with, had clearly identified resource requirements, and had undergone internal review prior to submission.

1.10.7.10 Ethics

It is expected that providers will have procedures in place to ensure that any teaching and learning or research activity at any level shall be conducted in a manner that is morally and professionally ethical. The panel was satisfied that this requirement has been met in respect of the proposed programmes.

1.10.7.11 Programme Titles and Award Titles

The Panel heard the rationale for the programme title and is satisfied that the programme title and award as proposed as being appropriate and consistent with QQI policy for the naming of awards.

1.10.8 RECOMMENDATION/COMMENT

FOR THE ATTENTION OF THE ACADEMIC COMMITTEE

The panel of experts recommend the revalidation of the following programmes:

NFQ Level	<i>Level 6</i>
Programme Title	<i>Higher Certificate in Computing Applications & Support</i>
ECTS	<i>120 ECTS</i>
Award Type	<i>Major Award</i>

Subject to:

Council's general conditions of approval

1.10.8.1 Commendations

1.10.8.2 Conditions

C1. There should be greater focus on problem solving and hands-on skills

1.10.8.3 Recommendations

- R1. More integrated assessment should be used across the programme
- R2. Links should be built explicitly between the database and programming modules
- R3. Rename the Web Authoring module.

1.11 BSc (Hons) in Computing

1.11.1 Details of Validation Event

PROVIDER	National College of Ireland
DATE OF VISIT	19 th March 2015
PROGRAMME(S) EVALUATED	BSc (Hons) in Computing
PROGRAMME (S) RECOMMENDED FOR APPROVAL	BSc (Hons) in Computing
PANEL OF EXPERTS	<p>Chair: David Denieffe Registrar, IT Carlow</p> <p>Subject Matter Experts Dr Gaye Kiely, College Lecturer, UCC Dr Christian Horn, Head of Dept of Computing, Dundalk, IT Ms Shruthi Chindalur, Head of EMEA Sales Development at LinkedIn</p> <p><i>In Attendance: Ms Louise Devlin, School of Computing (Rapporteur)</i></p>

1.11.2 Summary

The Expert Panel, having reviewed the documentation presented by NCI and considered the responses of the programme team during the course of the site visit; recommend approval of the following programme

BSc (Hons) in Computing
With no (0) conditions & seven (7) recommendations

1.11.3 Examination of Programmes

The panel met with staff of NCI involved in the design of the programme, to examine the programme submission against the criteria for the validation of programmes as stipulated by the QQI board. In this regard, the QQI's *Core Validation Policy and Criteria, 2010, revised 2013* was used by the Panel. The panel heard that this programme was originally validated in 201 was presented with extensive and comprehensive documentation outlining proposed amendments arising from programmatic review.

1.11.3.1 Development and publication of explicit intended learning outcomes

The programme submission documents, together with the outcome of discussions with NCI staff articulated the target learners' prerequisite learning and any other relevant assumptions about programme participants. The panel is satisfied that the programme learning outcomes are appropriate to the level and were designed using QQI's award standards for Computing at level 8 of the National Framework of Qualifications.

1.11.3.2 Programme content, design and learning environment

The Panel was satisfied that the programme is coherent and fit for its stated purpose. The programme content and learning environment are appropriate to the programmes intended learning outcomes and that the module learning outcomes are aligned to the programme learning outcomes. The programme team that the panel met is competent to enable learners to achieve the intended programme learning outcomes and to assess their achievements, in accordance with QQI's *Assessment and Standards 2013*. The panel is satisfied that the School of Computing has sufficient resources within its current full-time and associate faculty to appropriately resource the programme.

Members of the programmatic review panel visited the College library which also houses Assistive Technology resources for learners, teaching spaces, hardware lab and the Cloud Competency Centre and is satisfied that these resources are appropriate to these programme and learner population.

Comment on Programme Modules

Each module was reviewed individually and subject to the following commentary in relation to specific modules were found to have appropriate learning outcomes, indicative content and assessment strategies

1.11.3.3 Enabling the achievement of the intended programme learning outcomes

The panel is satisfied that learners will be able to meet the programme learning outcomes using the delivery mechanisms and patterns as described by the programme team.

1.11.3.4 Actions and procedures for access, transfer and progression for learners

The Panel was satisfied that the procedures for access, transfer and progression are consistent with national policy.

The panel is satisfied that the programme's use of *ECTS* (credit) and provisions for Recognition of Prior Learning (RPL) is consistent with QQI's *Assessment and Standards 2013* and with relevant national policy including:

- v. NQAI's *Principles and Operational Guidelines for the Implementation of a National Approach to Credit in Irish Higher Education and Training 2006*
- vi. NQAI's *Principles and Operational Guidelines for the Recognition of Prior Learning in Further and Higher Education and Training 2005*

1.11.3.5 Education and training needs

The panel is satisfied that this programme satisfies a current need in the Irish education market..

1.11.3.6 Programme viability

The Panel was satisfied that the programme is consistent with the provider's mission and strategy. The panel heard the projections for student intake over the next 5 year period.

1.11.3.7 Learner Protection

NCI's policy is that once a programme has commenced, the programme will be completed for all learners enrolled. It is National College of Ireland's policy that, should a programme commence, it will be offered to completion for the specific intake of learners. The College is committed to the provision of this programme. As a member of the Dublin Pillar II Cluster, NCI has agreement from Dublin City University and Maynooth University to provide Learner Protection. Learners may transfer to an appropriate DCU or Maynooth University programme. In the case where the programme does not have an appropriate transfer option DCU or Maynooth University will complete out the QQI award using NCI faculty and premises. NCI has agreement in principle from QQI and is currently working with QQI on finalising the arrangement of these provisions'

1.11.3.8 Assessment of learners

The panel is satisfied that the learners will be appropriately assessed and underpins the achievement of the relevant standard of knowledge, skill and competence.

1.11.3.9 Quality Assurance Arrangements

The panel is satisfied that NCI has appropriate quality assurance arrangements in place and that no new quality assurance arrangements are required for these programmes. The documentation submitted demonstrated that the programme development followed rigorous institutional quality assurance to ensure that it conforms with strategy, stakeholders had been consulted with, had clearly identified resource requirements, and had undergone internal review prior to submission.

1.11.3.10 Ethics

It is expected that providers will have procedures in place to ensure that any teaching and learning or research activity at any level shall be conducted in a manner that is morally and professionally ethical. The panel was satisfied that this requirement has been met in respect of the proposed programmes.

1.11.3.11 Programme Titles and Award Titles

The Panel heard the rationale for the programme title and is satisfied that the programme title and award as proposed as being appropriate and consistent with QQI policy for the naming of awards.

1.11.4 RECOMMENDATION/COMMENT

FOR THE ATTENTION OF THE ACADEMIC COMMITTEE

The panel of experts recommend the revalidation of the following programmes:

NFQ Level	<i>Level 8</i>
Programme Title	<i>BSc (Hons) in Computing</i>
ECTS	<i>240 ECTS</i>
Award Type	<i>Major Award</i>

Subject to:

Council's general conditions of approval

1.11.4.1 Commendations

1.11.4.2 Conditions

none

1.11.4.3 Recommendations

- R1.Document the nature of emerging technologies
- R2.Inclusion of a research methods modules
- R3.Rename or remove the networking stream
- R4.Consider classification of year 2 and 3
- R5.Review the management and operation of the academic internship – can it be recorded in any other way
- R6.Review the repeat options for workplacement
- R7.More integrated assessment should be used across the programme
- R8.Links should be built explicitly between the database and programming modules
- R9.Rename the Web Authoring module.

1.12 BSc (Hons) in Business Information Systems

1.12.1 Details of Validation Event

PROVIDER	National College of Ireland
DATE OF VISIT	19 th March 2015
PROGRAMME(S) EVALUATED	BSc (Hons) in Business Information Systems
PROGRAMME (S) RECOMMENDED FOR APPROVAL	BSc (Hons) in Business Information Systems
PANEL OF EXPERTS	<p>Chair: David Denieffe Registrar, IT Carlow</p> <p>Subject Matter Experts Dr Gaye Kiely, College Lecturer, UCC Dr Christian Horn, Head of Dept of Computing, Dundalk, IT Ms Shruthi Chindalur, Head of EMEA Sales Development at LinkedIn</p> <p><i>In Attendance: Ms Louise Devlin, School of Computing (Rapporteur)</i></p>

1.12.2 Summary

The Expert Panel, having reviewed the documentation presented by NCI and considered the responses of the programme team during the course of the site visit; recommend approval of the following programme

BSc (Hons) in Business Information Systems
With no (0) conditions & seven (7) recommendations

1.12.3 Examination of Programmes

The panel met with staff of NCI involved in the design of the programme, to examine the programme submission against the criteria for the validation of programmes as stipulated by the QQI board. In this regard, the QQI's *Core Validation Policy and Criteria, 2010, revised 2013* was used by the Panel. The panel heard that this programme was originally validated in 201 was presented with extensive and comprehensive documentation outlining proposed amendments arising from programmatic review.

1.12.3.1 Development and publication of explicit intended learning outcomes

The programme submission documents, together with the outcome of discussions with NCI staff articulated the target learners' prerequisite learning and any other relevant assumptions about programme participants. The panel is satisfied that the programme learning outcomes are appropriate to the level and were designed using QQI's award standards for Computing at level 8 of the National Framework of Qualifications.

1.12.3.2 Programme content, design and learning environment

The Panel was satisfied that the programme is coherent and fit for its stated purpose. The programme content and learning environment are appropriate to the programmes intended learning outcomes and that the module learning outcomes are aligned to the programme learning outcomes. The programme team that the panel met is competent to enable learners to achieve the intended programme learning outcomes and to assess their achievements, in accordance with QQI's *Assessment and Standards 2013*. The panel is satisfied that the School of Computing has sufficient resources within its current full-time and associate faculty to appropriately resource the programme.

Members of the programmatic review panel visited the College library which also houses Assistive Technology resources for learners, teaching spaces, hardware lab and the Cloud Competency Centre and is satisfied that these resources are appropriate to these programme and learner population.

Comment on Programme Modules

Each module was reviewed individually and subject to the following commentary in relation to specific modules were found to have appropriate learning outcomes, indicative content and assessment strategies

1.12.3.3 Enabling the achievement of the intended programme learning outcomes

The panel is satisfied that learners will be able to meet the programme learning outcomes using the delivery mechanisms and patterns as described by the programme team.

1.12.3.4 Actions and procedures for access, transfer and progression for learners

The Panel was satisfied that the procedures for access, transfer and progression are consistent with national policy.

The panel is satisfied that the programme's use of *ECTS* (credit) and provisions for Recognition of Prior Learning (RPL) is consistent with QQI's *Assessment and Standards 2013* and with relevant national policy including:

- vii. NQAI's *Principles and Operational Guidelines for the Implementation of a National Approach to Credit in Irish Higher Education and Training 2006*
- viii. NQAI's *Principles and Operational Guidelines for the Recognition of Prior Learning in Further and Higher Education and Training 2005*

1.12.3.5 Education and training needs

The panel is satisfied that this programme satisfies a current need in the Irish education market..

1.12.3.6 Programme viability

The Panel was satisfied that the programme is consistent with the provider's mission and strategy. The panel heard the projections for student intake over the next 5 year period.

1.12.3.7 Learner Protection

NCI's policy is that once a programme has commenced, the programme will be completed for all learners enrolled. It is National College of Ireland's policy that, should a programme commence, it will be offered to completion for the specific intake of learners. The College is committed to the provision of this programme. As a member of the Dublin Pillar II Cluster, NCI has agreement from Dublin City University and Maynooth University to provide Learner Protection. Learners may transfer to an appropriate DCU or Maynooth University programme. In the case where the programme does not have an appropriate transfer option DCU or Maynooth University will complete out the QQI award using NCI faculty and premises. NCI has agreement in principle from QQI and is currently working with QQI on finalising the arrangement of these provisions'

1.12.3.8 Assessment of learners

The panel is satisfied that the learners will be appropriately assessed and underpins the achievement of the relevant standard of knowledge, skill and competence.

1.12.3.9 Quality Assurance Arrangements

The panel is satisfied that NCI has appropriate quality assurance arrangements in place and that no new quality assurance arrangements are required for these programmes. The documentation submitted demonstrated that the programme development followed rigorous institutional quality assurance to ensure that it conforms with strategy, stakeholders had been consulted with, had clearly identified resource requirements, and had undergone internal review prior to submission.

1.12.3.10 Ethics

It is expected that providers will have procedures in place to ensure that any teaching and learning or research activity at any level shall be conducted in a manner that is morally and professionally ethical. The panel was satisfied that this requirement has been met in respect of the proposed programmes.

1.12.3.11 Programme Titles and Award Titles

The Panel heard the rationale for the programme title however, is it not fully satisfied that the programme title appropriately reflects the content

1.12.4 RECOMMENDATION/COMMENT

FOR THE ATTENTION OF THE ACADEMIC COMMITTEE

The panel of experts recommend the revalidation of the following programmes:

NFQ Level	<i>Level 8</i>
Programme Title	<i>BSc (Hons) in Business Information Systems</i>
ECTS	<i>240 ECTS</i>
Award Type	<i>Major Award</i>

Subject to:

Council's general conditions of approval

1.12.4.1 Commendations

1.12.4.2 Conditions

- C1. Resolve the credit value for Strategic Management
- C2. Justify the use of 'Business' in the title. Business should be made more explicit in the programme .

1.12.4.3 Recommendations

- R1. Elective options for the programme should be reviewed in conjunction with the School of Business
- R2. Systems analysis should be brought to the fore in Business Information Systems
- R3. Consider classification of year 2 and 3
- R4. Review the management and operation of the academic internship – can it be recorded in any other way
- R5. Review the repeat options for workplacement
- R6. More integrated assessment should be used across the programme
- R7. Links should be built explicitly between the database and programming modules
- R8. Rename the Web Authoring module.

1.13 MSc in Cloud Computing

1.13.1 Details of Validation Event

PROVIDER	National College of Ireland
DATE OF VISIT	20 th March 2015
PROGRAMME(S) EVALUATED	MSc in Cloud Computing Postgraduate Diploma in Science in Cloud Computing Certificate in Cloud Computing
PROGRAMME (S) RECOMMENDED FOR APPROVAL	MSc in Cloud Computing Postgraduate Diploma in Science in Cloud Computing Certificate in Cloud Computing (subject to recommendation 7)
PANEL OF EXPERTS	Chair: David Denieffe Registrar, IT Carlow Subject Matter Experts Dr Christian Horn Head of Dept of Computing, Dundalk, IT Dr Brendan Jennings, Lecturer, Waterford IT Dr Pat O’Sullivan, Chief Scientist, IBM <i>In Attendance: Sinéad O’Sullivan, Director QASS, Rapporteur</i>

1.13.2 Summary

The Expert Panel, having reviewed the documentation presented by NCI and considered the responses of the programme team during the course of the site visit; recommend approval of the following programme

- MSc in Cloud Computing
- Postgraduate Diploma in Science in Cloud Computing
- Certificate in Cloud Computing

With no (0) conditions & seven (7) recommendations

1.13.3 Examination of Programmes

The panel met with staff of NCI involved in the design of the programme, to examine the programme submission against the criteria for the validation of programmes as stipulated by the QQI board. In this regard, the QQI’s *Core Validation Policy and Criteria, 2010, revised 2013* was used by the Panel. The panel heard that this programme was originally validated in 2011 and has had 4 intakes of both full and part-time learners. The panel was presented with extensive and comprehensive documentation outlining proposed amendments resulting from programmatic review.

1.13.3.1 Development and publication of explicit intended learning outcomes

The programme submission documents, together with the outcome of discussions with NCI staff articulated the target learners’ prerequisite learning and any other relevant assumptions about programme participants. The panel noted that there were a large number of programme learning outcomes and heard that the rationale for this was that each learning outcome was mapped more closely to the QQI award standards, but that the

programme team agreed that these could be condensed to a fewer number. The panel is satisfied that the programme learning outcomes articulated are appropriate to the level and were designed using QQI's award standards for Science at level 9 of the National Framework of Qualifications.

1.13.3.2 Programme content, design and learning environment

The Panel was satisfied that the programmes are coherent and fit for their stated purpose as a standalone award or in the case of the Postgraduate Diploma in Science in Cloud Computing, as an exit award for those who fail to complete the related MSc. . The programme content and learning environment are appropriate to the programmes intended learning outcomes and that the module learning outcomes are aligned to the programme learning outcomes . The programme team that the panel met is competent to enable learners to achieve the intended programme learning outcomes and to assess their achievements, in accordance with QQI's *Assessment and Standards 2013*. The panel is satisfied that the School of Business has sufficient resources within its current full-time and associate faculty to appropriately resource the programme.

Members of the panel visited the College library which also houses Assistive Technology resources for learners, teaching spaces, hardware lab and the Cloud Competency Centre and is satisfied that these resources are appropriate to these programme and learner population.

Comment on Programme Modules

Each module was reviewed individually and subject to the following commentary in relation to specific modules were found to have appropriate learning outcomes, indicative content and assessment strategies

Utility Computing: The panels if of the view that this module could be very challenging for learners and that appropriate case studies should be used in Utility Computing so that students see the practical benefit of the module

1.13.3.3 Enabling the achievement of the intended programme learning outcomes

As noted earlier that the number of learning outcomes at a programme level should be condensed and is satisfied that learners will be able to meet the programme learning outcomes using the delivery mechanisms and patterns as described by the programme team.

1.13.3.4 Actions and procedures for access, transfer and progression for learners

The Panel was satisfied that the procedures for access, transfer and progression are consistent with national policy. The programme documentation should reflect consistency across all programmes regarding the approach to interviewing prospective applicants.

The panel is satisfied that the programme's use of *ECTS* (credit) and provisions for Recognition of Prior Learning (RPL) is consistent with QQI's *Assessment and Standards 2013* and with relevant national policy including:

- ix. NQAI's *Principles and Operational Guidelines for the Implementation of a National Approach to Credit in Irish Higher Education and Training 2006*
- x. NQAI's *Principles and Operational Guidelines for the Recognition of Prior Learning in Further and Higher Education and Training 2005*

1.13.3.5 Education and training needs

The panel is satisfied that this programme satisfies a current need in the Irish education market..

1.13.3.6 Programme viability

The Panel was satisfied that the programme is consistent with the provider's mission and strategy. The panel heard the projections for student intake over a 5 year period.

1.13.3.7 Learner Protection

NCI's policy is that once a programme has commenced, the programme will be completed for all learners enrolled. It is National College of Ireland's policy that, should a programme commence, it will be offered to completion for the specific intake of learners. The College is committed to the provision of this programme. As a member of the Dublin Pillar II Cluster, NCI has agreement from Dublin City University and Maynooth University to provide Learner Protection. Learners may transfer to an appropriate DCU or Maynooth University programme. In the case where the programme does not have an appropriate transfer option DCU or Maynooth University will complete out the QQI award using NCI faculty and premises. NCI has agreement in principle from QQI and is currently working with QQI on finalising the arrangement of these provisions'

1.13.3.8 Assessment of learners

The panel is satisfied that the learners will be appropriately assessed and underpins the achievement of the relevant standard of knowledge, skill and competence and commends the innovative assessment methods outlined in some modules.

1.13.3.9 Quality Assurance Arrangements

The panel is satisfied that NCI has appropriate quality assurance arrangements in place and that no new quality assurance arrangements are required for these programmes. The documentation submitted demonstrated that the programme development followed rigorous institutional quality assurance to ensure that it conforms with strategy, stakeholders had been consulted with, had clearly identified resource requirements, and had undergone internal review prior to submission.

1.13.3.10 Ethics

It is expected that providers will have procedures in place to ensure that any teaching and learning or research activity at any level shall be conducted in a manner that is morally and professionally ethical. The panel was satisfied that this requirement has been met in respect of the proposed programmes.

1.13.3.11 Programme Titles and Award Titles

The Panel heard the rationale for the programme titles and is satisfied that the programme title and award as proposed as being appropriate and consistent with QQI policy for the naming of awards whilst observing that the title for the Certificate in Cloud Computing may be more appropriately titled due to the emphasis on business computing.

1.13.4 RECOMMENDATION/COMMENT**FOR THE ATTENTION OF THE ACADEMIC COMMITTEE**

The panel of experts recommend the revalidation of the following programmes:

NFQ Level	<i>Level 9</i>
Programme Title	<i>Master of Science in Cloud Computing</i>
ECTS	<i>90 ECTS</i>
Award Type	<i>Major Award</i>

NFQ Level	<i>Level 9</i>
Programme Title	<i>Postgraduate Diploma in Science in Cloud Computing</i>
ECTS	<i>60 ECTS</i>
Award Type	<i>Major Award</i>

NFQ Level	<i>Level 9</i>
Programme Title	<i>Certificate in Cloud Computing (subject to recommendation 7)</i>
ECTS	<i>30 ECTS</i>
Award Type	<i>Major Award</i>

Subject to:

Council's general conditions of approval

1.13.4.1 Commendations

1. Industry engagement
2. Employability of graduates
3. Agility of the School
4. Manner in which faculty demonstrate their professional development/currency of knowledge

1.13.4.2 Conditions

none

1.13.4.3 Recommendations

- R1. The College should formally track the employability of postgraduate students and part-time students
- R2. The use of incubation companies as an option for projects should be further explored, however the panel commends the programme team for its caution to ensure that the student experience is optimum

- R3. The application and interview process should be consistent across all programmes within the School and clear to prospective students
- R4. Options for presenting the viva to a wider group should be explored so that standards can be calibrated across programmes and practice shared
- R5. The composition of the MSc portfolio should be monitored to ensure that graduates and the programmes have a distinct identity
- R6. Appropriate case studies should be used in Utility Computing so that students see the practical benefit of the module
- R7. The title of the Certificate in Cloud Computing should be reconsidered due to the emphasis placed on business computing.

1.14 MSc in Web Technologies

1.14.1 Details of Validation Event

PROVIDER	National College of Ireland
DATE OF VISIT	20 th March 2015
PROGRAMME(S) EVALUATED	MSc in Web Technologies Postgraduate Diploma in Science in Web Technologies
PROGRAMME (S) RECOMMENDED FOR APPROVAL	MSc in Web Technologies Postgraduate Diploma in Science in Web Technologies
PANEL OF EXPERTS	<p>Chair: David Denieffe Registrar, IT Carlow</p> <p>Subject Matter Experts Dr Christian Horn Head of Dept of Computing, Dundalk, IT Dr Brendan Jennings, Lecturer, Waterford IT Dr Pat O’Sullivan, Chief Scientist, IBM</p> <p><i>In Attendance: Sinéad O’Sullivan, Director QASS, Rapporteur</i></p>

1.14.2 Summary

The Expert Panel, having reviewed the documentation presented by NCI and considered the responses of the programme team during the course of the site visit; recommend approval of the following programme

- MSc in Web Technologies
- Postgraduate Diploma in Science in Web Technologies

With no (0) conditions & five (5) recommendations

1.14.3 Examination of Programmes

The panel met with staff of NCI involved in the design of the programme, to examine the programme submission against the criteria for the validation of programmes as stipulated by the QQI board. In this regard, the QQI’s *Core Validation Policy and Criteria, 2010, revised 2013* was used by the Panel. The panel heard that this programme was originally validated in 2010 and has had 4 intakes of both full and part-time learners. The panel was presented with extensive and comprehensive documentation outlining proposed amendments resulting from programmatic review.

1.14.3.1 Development and publication of explicit intended learning outcomes

The programme submission documents, together with the outcome of discussions with NCI staff articulated the target learners’ prerequisite learning and any other relevant assumptions about programme participants. The panel is satisfied that the programme learning outcomes articulated are appropriate to the level and were designed using QQI’s award standards for Science at level 9 of the National Framework of Qualifications.

1.14.3.2 Programme content, design and learning environment

The Panel was satisfied that the programmes are coherent and fit for their stated purpose as a standalone award or in the case of the Postgraduate Diploma in Science in Web Technologies, as an exit award for those who fail to complete the related MSc. The programme content and learning environment are appropriate to the programmes intended learning outcomes and that the module learning outcomes are aligned to the programme learning outcomes. The programme team that the panel met is competent to enable learners to achieve the intended programme learning outcomes and to assess their achievements, in accordance with QQI's *Assessment and Standards 2013*. The panel is satisfied that the School of Computing has sufficient resources within its current full-time and associate faculty to appropriately resource the programme.

Members of the panel visited the College library which also houses Assistive Technology resources for learners, teaching spaces, hardware lab and the Cloud Competency Centre and is satisfied that these resources are appropriate to these programme and learner population.

Comment on Programme Modules

Each module was reviewed individually and were found to have appropriate learning outcomes, indicative content and assessment strategies

1.14.3.3 Enabling the achievement of the intended programme learning outcomes

As noted earlier that the number of learning outcomes at a programme level should be condensed and is satisfied that learners will be able to meet the programme learning outcomes using the delivery mechanisms and patterns as described by the programme team.

1.14.3.4 Actions and procedures for access, transfer and progression for learners

The Panel was satisfied that the procedures for access, transfer and progression are consistent with national policy. The programme documentation should reflect consistency across all programmes regarding the approach to interviewing prospective applicants.

The panel is satisfied that the programme's use of *ECTS* (credit) and provisions for Recognition of Prior Learning (RPL) is consistent with QQI's *Assessment and Standards 2013* and with relevant national policy including:

- xi. NQAI's *Principles and Operational Guidelines for the Implementation of a National Approach to Credit in Irish Higher Education and Training 2006*
- xii. NQAI's *Principles and Operational Guidelines for the Recognition of Prior Learning in Further and Higher Education and Training 2005*

1.14.3.5 Education and training needs

The panel is satisfied that this programme satisfies a current need in the Irish education market..

1.14.3.6 Programme viability

The Panel was satisfied that the programme is consistent with the provider's mission and strategy. The panel heard the projections for student intake over a 5 year period.

1.14.3.7 Learner Protection

NCI's policy is that once a programme has commenced, the programme will be completed for all learners enrolled. It is National College of Ireland's policy that, should a programme commence, it will be offered to completion for the specific intake of learners. The College is committed to the provision of this programme. As a member of the Dublin Pillar II Cluster, NCI has agreement from Dublin City University and Maynooth University to provide Learner Protection. Learners may transfer to an appropriate DCU or Maynooth University programme. In the case where the programme does not have an appropriate transfer option DCU or Maynooth University will complete out the QQI award using NCI faculty and

premises. NCI has agreement in principle from QQI and is currently working with QQI on finalising the arrangement of these provisions'

1.14.3.8 Assessment of learners

The panel is satisfied that the learners will be appropriately assessed and underpins the achievement of the relevant standard of knowledge, skill and competence and commends the innovative assessment methods outlined in some modules.

1.14.3.9 Quality Assurance Arrangements

The panel is satisfied that NCI has appropriate quality assurance arrangements in place and that no new quality assurance arrangements are required for these programmes. The documentation submitted demonstrated that the programme development followed rigorous institutional quality assurance to ensure that it conforms with strategy, stakeholders had been consulted with, had clearly identified resource requirements, and had undergone internal review prior to submission.

1.14.3.10 Ethics

It is expected that providers will have procedures in place to ensure that any teaching and learning or research activity at any level shall be conducted in a manner that is morally and professionally ethical. The panel was satisfied that this requirement has been met in respect of the proposed programmes.

1.14.3.11 Programme Titles and Award Titles

The Panel heard the rationale for the programme titles and is satisfied that the programme title and award as proposed as being appropriate and consistent with QQI policy for the naming of awards.

1.14.4 RECOMMENDATION/COMMENT**FOR THE ATTENTION OF THE ACADEMIC COMMITTEE**

The panel of experts recommend the revalidation of the following programmes:

NFQ Level	<i>Level 9</i>
Programme Title	<i>Master of Science in Web Technologies</i>
ECTS	<i>90 ECTS</i>
Award Type	<i>Major Award</i>

NFQ Level	<i>Level 9</i>
Programme Title	<i>Postgraduate Diploma in Science in Web Technologies</i>
ECTS	<i>60 ECTS</i>
Award Type	<i>Major Award</i>

Subject to:

Council's general conditions of approval

1.14.4.1 Commendations

5. Industry engagement
6. Employability of graduates
7. Agility of the School
8. Manner in which faculty demonstrate their professional development/currency of knowledge

1.14.4.2 Conditions

none

1.14.4.3 Recommendations

- R1. The College should formally track the employability of postgraduate students and part-time students
- R2. The use of incubation companies as an option for projects should be further explored, however the panel commends the programme team for its caution to ensure that the student experience is optimum
- R3. The application and interview process should be consistent across all programmes within the School and clear to prospective students
- R4. Options for presenting the viva to a wider group should be explored so that standards can be calibrated across programmes and practice shared
- R5. The composition of the MSc portfolio should be monitored to ensure that graduates and the programmes have a distinct identity

MSc in Mobile Technologies

1.14.5 Details of Validation Event

PROVIDER	National College of Ireland
DATE OF VISIT	20 th March 2015
PROGRAMME(S) EVALUATED	MSc in Mobile Technologies Postgraduate Diploma in Science in Mobile Technologies Certificate in Mobile Technologies
PROGRAMME (S) RECOMMENDED FOR APPROVAL	MSc in Mobile Technologies Postgraduate Diploma in Science in Mobile Technologies Certificate in Mobile Technologies (subject to condition 1)
PANEL OF EXPERTS	<p>Chair: David Denieffe Registrar, IT Carlow</p> <p>Subject Matter Experts Dr Christian Horn Head of Dept of Computing, Dundalk, IT Dr Brendan Jennings, Lecturer, Waterford IT Dr Pat O’Sullivan, Chief Scientist, IBM</p> <p><i>In Attendance: Sinéad O’Sullivan, Director QASS, Rapporteur</i></p>

1.14.6 Summary

The Expert Panel, having reviewed the documentation presented by NCI and considered the responses of the programme team during the course of the site visit; recommend approval of the following programme

- MSc in Mobile Technologies
- Postgraduate Diploma in Science in Mobile Technologies
- Certificate in Mobile Technologies (subject to condition 1)

With 1 conditions & five (5) recommendations

1.14.7 Examination of Programmes

The panel met with staff of NCI involved in the design of the programme, to examine the programme submission against the criteria for the validation of programmes as stipulated by the QQI board. In this regard, the QQI’s *Core Validation Policy and Criteria, 2010, revised 2013* was used by the Panel. The panel heard that this programme was originally validated in 2014 and therefore cannot be subject to programmatic review. The panel has reviewed this programme only in the light of the inclusion of 2 elective modules which have been added to give learners an option in the area of the ‘Internet of Things’. This development is also part of a new award Certificate in the Internet of Things’ was considered by the panel and is recommended for validation under separate process. The panel is satisfied that the introduction of these elective modules have not affected the programme learning outcomes of the validated award.

1.14.7.1 Programme Titles and Award Titles

Due to the amendments made to the curriculum ie. removal of security module, the panel requires that the award of Certificate in Module Technologies is retitled.

1.14.8 RECOMMENDATION/COMMENT**FOR THE ATTENTION OF THE ACADEMIC COMMITTEE**

The panel of experts recommend the proposed amendments of the following programmes:

NFQ Level	<i>Level 9</i>
Programme Title	<i>Master of Science in Mobile Technologies</i>
ECTS	<i>90 ECTS</i>
Award Type	<i>Major Award</i>

NFQ Level	<i>Level 9</i>
Programme Title	<i>Postgraduate Diploma in Science in Mobile Technologies</i>
ECTS	<i>60 ECTS</i>
Award Type	<i>Major Award</i>

NFQ Level	<i>Level 9</i>
Programme Title	<i>Certificate in Mobile Technologies (subject to condition 1)</i>
ECTS	<i>30 ECTS</i>
Award Type	<i>Major Award</i>

Subject to:

Council's general conditions of approval

1.14.8.1 Conditions

The title of the Certificate in Mobile Technologies is changed to reflect the removal of security.

1.14.8.2 Recommendations

- R1. The College should formally track the employability of postgraduate students and part-time students
- R2. The use of incubation companies as an option for projects should be further explored, however the panel commends the programme team for its caution to ensure that the student experience is optimum
- R3. The application and interview process should be consistent across all programmes within the School and clear to prospective students
- R4. Options for presenting the viva to a wider group should be explored so that standards can be calibrated across programmes and practice shared

R5. The composition of the MSc portfolio should be monitored to ensure that graduates and the programmes have a distinct identity

1.15 Higher Diploma in Science in Web Technologies

1.15.1 Details of Validation Event

PROVIDER	National College of Ireland
DATE OF VISIT	20 th March 2015
PROGRAMME(S) EVALUATED	Higher Diploma in Science in Web Technologies Certificate in Web Technologies
PROGRAMME (S) RECOMMENDED FOR APPROVAL	Higher Diploma in Science in Web Technologies Certificate in Web Technologies
PANEL OF EXPERTS	<p>Chair: David Denieffe Registrar, IT Carlow</p> <p>Subject Matter Experts Dr Christian Horn Head of Dept of Computing, Dundalk, IT Dr Brendan Jennings, Lecturer, Waterford IT Dr Pat O’Sullivan, Chief Scientist, IBM</p> <p><i>In Attendance: Sinéad O’Sullivan, Director QASS, Rapporteur</i></p>

1.15.2 Summary

The Expert Panel, having reviewed the documentation presented by NCI and considered the responses of the programme team during the course of the site visit; recommend approval of the following programme

- Higher Diploma in Science in Web Technologies
- Certificate in Web Technologies

With no (0) conditions & five (5) recommendations

1.15.3 Examination of Programmes

The panel met with staff of NCI involved in the design of the programme, to examine the programme submission against the criteria for the validation of programmes as stipulated by the QQI board. In this regard, the QQI’s *Core Validation Policy and Criteria, 2010, revised 2013* was used by the Panel. The panel heard that this programme was originally validated in 2010 and has had 4 intakes of both full and part-time learners. The panel was presented with extensive and comprehensive documentation outlining proposed amendments resulting from programmatic review.

1.15.3.1 Development and publication of explicit intended learning outcomes

The programme submission documents, together with the outcome of discussions with NCI staff articulated the target learners’ prerequisite learning and any other relevant assumptions about programme participants. The panel is satisfied that the programme learning outcomes articulated are appropriate to the level and were designed using QQI’s award standards for Science at level 9 of the National Framework of Qualifications.

1.15.3.2 Programme content, design and learning environment

The Panel was satisfied that the programmes are coherent and fit for their stated purpose as a standalone award or in the case of the Certificate in Web Technologies, as an exit award for those who fail to complete the related Higher Diploma. The programme content and learning environment are appropriate to the programmes intended learning outcomes and that the module learning outcomes are aligned to the programme learning outcomes. The programme team that the panel met is competent to enable learners to achieve the intended programme learning outcomes and to assess their achievements, in accordance with QQI's *Assessment and Standards 2013*. The panel is satisfied that the School of Computing has sufficient resources within its current full-time and associate faculty to appropriately resource the programme.

Members of the panel visited the College library which also houses Assistive Technology resources for learners, teaching spaces, hardware lab and the Cloud Competency Centre and is satisfied that these resources are appropriate to these programme and learner population.

Comment on Programme Modules

Each module was reviewed individually and were found to have appropriate learning outcomes, indicative content and assessment strategies. A general observation is that the readings and resources for all modules should be reviewed to ensure currency.

Web Authoring: The title of the module should be reconsidered.

1.15.3.3 Enabling the achievement of the intended programme learning outcomes

As noted earlier that the number of learning outcomes at a programme level should be condensed and is satisfied that learners will be able to meet the programme learning outcomes using the delivery mechanisms and patterns as described by the programme team.

1.15.3.4 Actions and procedures for access, transfer and progression for learners

The Panel was satisfied that the procedures for access, transfer and progression are consistent with national policy. The programme documentation should reflect consistency across all programmes regarding the approach to interviewing prospective applicants.

The panel is satisfied that the programme's use of *ECTS* (credit) and provisions for Recognition of Prior Learning (RPL) is consistent with QQI's *Assessment and Standards 2013* and with relevant national policy including:

- xiii. NQAI's *Principles and Operational Guidelines for the Implementation of a National Approach to Credit in Irish Higher Education and Training 2006*
- xiv. NQAI's *Principles and Operational Guidelines for the Recognition of Prior Learning in Further and Higher Education and Training 2005*

1.15.3.5 Education and training needs

The panel is satisfied that this programme satisfies a current need in the Irish education market..

1.15.3.6 Programme viability

The Panel was satisfied that the programme is consistent with the provider's mission and strategy. The panel heard the projections for student intake over a 5 year period.

1.15.3.7 Learner Protection

NCI's policy is that once a programme has commenced, the programme will be completed for all learners enrolled. It is National College of Ireland's policy that, should a programme commence, it will be offered to completion for the specific intake of learners. The College is committed to the provision of this programme. As a member of the Dublin Pillar II Cluster, NCI has agreement from Dublin City University and Maynooth University to provide

Learner Protection. Learners may transfer to an appropriate DCU or Maynooth University programme. In the case where the programme does not have an appropriate transfer option DCU or Maynooth University will complete out the QQI award using NCI faculty and premises. NCI has agreement in principle from QQI and is currently working with QQI on finalising the arrangement of these provisions'

1.15.3.8 Assessment of learners

The panel is satisfied that the learners will be appropriately assessed and underpins the achievement of the relevant standard of knowledge, skill and competence and commends the innovative assessment methods outlined in some modules.

1.15.3.9 Quality Assurance Arrangements

The panel is satisfied that NCI has appropriate quality assurance arrangements in place and that no new quality assurance arrangements are required for these programmes. The documentation submitted demonstrated that the programme development followed rigorous institutional quality assurance to ensure that it conforms with strategy, stakeholders had been consulted with, had clearly identified resource requirements, and had undergone internal review prior to submission.

1.15.3.10 Ethics

It is expected that providers will have procedures in place to ensure that any teaching and learning or research activity at any level shall be conducted in a manner that is morally and professionally ethical. The panel was satisfied that this requirement has been met in respect of the proposed programmes.

1.15.3.11 Programme Titles and Award Titles

The Panel heard the rationale for the programme titles and is satisfied that the programme title and award as proposed as being appropriate and consistent with QQI policy for the naming of awards.

1.15.4 RECOMMENDATION/COMMENT

FOR THE ATTENTION OF THE ACADEMIC COMMITTEE

The panel of experts recommend the revalidation of the following programmes:

NFQ Level	<i>Level 8</i>
Programme Title	<i>Higher Diploma in Science in Web Technologies</i>
ECTS	<i>60 ECTS</i>
Award Type	<i>Major Award</i>

NFQ Level	<i>Level 8</i>
Programme Title	<i>Certificate in Web Technologies</i>
ECTS	<i>30 ECTS</i>
Award Type	<i>Major Award</i>

Subject to:

Council's general conditions of approval

1.15.4.1 Commendations

- Industry engagement
- Employability of graduates
- Agility of the School
- Manner in which faculty demonstrate their professional development/currency of knowledge

1.15.4.2 Conditions

none

1.15.4.3 Recommendations

- R1. The College should formally track the employability of postgraduate students and part-time students
- R2. The use of incubation companies as an option for projects should be further explored, however the panel commends the programme team for its caution to ensure that the student experience is optimum
- R3. The application and interview process should be consistent across all programmes within the School and clear to prospective students
- R4. A general observation is that the readings and resources for all modules should be reviewed to ensure currency.
- R5. **Web Authoring**: The title of the module should be reconsidered.

Appendix 1 – NCI representatives

1.15.5 NCI Staff Met

**NCI Staff List
Wednesday 18th March**

Dr Philip Matthews	President
Prof. Jimmy Hill	Vice President for Academic Affairs & Research/ Acting Dean School of Business
Mr John McGarrigle	Registrar
Dr Pramod Pathak	Dean School of Computing
Mr Colin Whitston	Vice Dean Undergraduate Programmes
Dr Corina Sheerin	Lecturer, School of Business
Dr Horacio Gonzalez Velez	Head of Cloud Competency Centre
Mr Paul Stynes	Vice Dean, School of Computing
Dr Leo Casey	Director Learning & Teaching Innovation & Research
Ms Sinéad O’Sullivan	Director Quality Assurance & Statistical Services
Ms Deirdre Giblin	Head of Professional Education & Training
Mr Richard Barry	Director International Development

Faculty Met on 19th & 20th March

Dr Pramod Pathak	Dr Horacio Gonzalez Velez
Mr Paul Stynes	Dr Eugene O’Loughlin
Dr Cristina Hava Muntean	Dr Paul Hayes
Mr Michael Bradford	Ms Lisa Murphy
Mr Jonathan McCarthy	Dr Simon Caton
Mr Frank McArdle	Mr Sam Cogan
Mr Derek Caprani	Dr Orla Lahart
Mr Ron Elliot	Dr Anu Sahni
Dr Adriana Chris	Mr Colm Bennett
Mr Eugene McLaughlin	Ms Leonie Deasy
Mr Mikhail Timofeev	Dr Jer Hayes
Mr John Pendlebury	Ms Ellen Byrne
Ms Siobhan Mockler, Workplacement Service	

1.15.6 Students Met

Umashankar Ambigananthan	Carl Mitchell	Tan Phey Yin
Peter McDonnell (Niamh Na Bhriain	Conal King
Dorothy Kavanagh	Eoin McMahon	
Desmond	Philip Plunkett	

2 Programme Team Response

National College of Ireland School of Computing



Response to programmatic review panel report
May 2015

2.1 Introduction

The School of Computing programmes have been evaluated by the programmatic review panel against the validation criteria outlined in QQI's Core Validation Policy and Criteria (2013) and recommendations and conditions were set.

This document describes the School of Computing's response to the expert panel report on the programmatic review 18th-20th March 2015.

Several recommendations will be further investigated by the college through programme committee, school committee, academic operations, research committees, academic council and in consultation with the relevant NCI departments to ensure consistency across the college.

The recommendations that relate to "Revisit programme director roles and duties to ensure coherence across full-time and part-time programmes" will be addressed through Academic Operations Committee, Academic Council and HR department. Likewise the recommendation that relates to "Formalise new lecturer induction and requirements for use of technology e.g. Moodle" will be investigated by Academic Operations Committee, Academic Council and HR department.

The recommendation that relates to "Recommend research metrics as outputs" and "Formalise research partners in cluster areas to take advantage of funding opportunities" will be further investigated by the school committee, Research Committee and Academic Council.

The recommendations that relate to "Opportunities to look at professional accreditation in computing programmes" will be investigated by the programme committee, school committee and academic operations. In addition the school will explore the recommendation "Expand rationale for block release where used and how is this integrated across modules." through Academic Operations and Academic Council.

The recommendations that relate to "Consider group work through an assessment centre day" and "Ensure consistency in module requirements for attendance and assessment across the institute" will be investigated by the learning and teaching committee and academic council.

A review of Academic Standards in the School of Computing was performed by Professor Wallace Ewart and Professor Kevin Ryan. The review was complimentary and found that there was an outstanding commitment to constantly improving the processes and standards within the School. The School is in the process of implementing the findings from the report as follows:

- School Examinations Board before the External examiner arrives
- The assignment of supervisors to students at postgraduate level early in the examination process
- An annual Research Supervisors Symposium
- A project showcase where students can disseminate their work
- The inclusion of the supervisor as first marker in the marking the dissertations/projects
- A unified view of the Viva at School level
- The inclusion of associate faculty in the research supervision of students at postgraduate level
- The formalisation of training on Moodle for faculty
- Recruitment of faculty in the area of technology enhanced learning
- The review of the programme director role

- Inclusion of Associate faculty representative in School meetings

The remaining sections of this document describe the response of the programme teams to the conditions and recommendations made by the expert panel for programmatic review.

2.2 Acknowledgements

The school would like to thank the panel of experts for their advice on improving the schools programmes through conditions and recommendations made for each programme. In particular the school would like to thank:

- Mr Gerard O'Donovan, Head of Faculty of Business & Humanities, Cork IT (*Chair*)
- Dr Tara Ryan, Education Partnerships/Student Services Manager, IADT
- Ms Fiona O'Riordan, Head of Teaching Excellence, Griffith College
- Mr David Denieffe, Registrar, IT Carlow
- Mr Emmet Hughes, Graduate /Vice President NCISU
- Dr Gaye Kiely, College Lecturer, UCC
- Dr Christian Horn, Head of Dept of Computing, Dundalk, IT
- Ms Shruthi Chindalur, Head of EMEA Sales Development at **LinkedIn**
- Dr Brendan Jennings, Lecturer, Waterford IT
- Dr Pat O'Sullivan, Chief Scientist, IBM

2.3 Quality Assurance

	Comment	Response
C1	Constructively align a grid of assessment linked to learning outcomes at programme level –with consideration of optimum quantity and variety of assessment in light of refined learning outcomes.	A column titled "Outcomes addressed" has been added to the proposed assessment schedule of each programme. The Outcomes addressed describes the learning outcomes that are addressed by each module assessment component.
R1	Revisit programme director roles and duties to ensure coherence across full-time and part-time programmes	The course director's role and duties is documented as a role description with HR. The college will investigate this role with respect to coherence across full-time and part-time programmes through academic operations committee, academic council and HR department.
R2	Be consistent and explicit in relation to entry requirements for programmes	<p>The entry requirements for admission to programmes is described in quality procedures for the college. The quality procedures address</p> <ul style="list-style-type: none"> Admission of leaving certificate applicants to full-time programmes Admission of mature applicants to full-time undergraduate courses Admission of applicants to taught postgraduate courses Admission of applicants with a disability Admission of applicants under special initiative programmes Recognition of prior learning Admission with advanced standing. <p>The access criteria for the school of computing programmes has been updated to ensure compliance with the above procedures. In addition the following text was added to the access criteria sub section of Access.</p> <p>“Advanced Standing</p> <p>Advanced standing is a term which covers the situation where any learner graduating from a course offered outside of National College of Ireland is offered admission (usually to a year other than year 1) to an NCI programme on the basis of an agreement between NCI and another HEI. It will not be necessary for the individual academic credentials of the applicant to be re-approved by the Programme Director. This process includes arrangements with international HEIs.”</p>
R3	Expand rationale for block release where used and how is this integrated across modules	<p>The School of Computing do not have any modules that are taught through block release. However this is common practice in the School of Business.</p> <p>The School will investigate the use of this practice for the entire college through academic operations and academic council.</p>
R4	Formalise new lecturer induction and requirements for use of technology e.g.	The HR department provide a formalised induction programme for new associate faculty.

	Comment	Response
	Moodle	The school augment this induction with workshops on using the learning management systems such as Moodle, entering marks into Quercus, use of the Portal and Adobe Connect. This induction will be formalised through academic operations, academic council and HR department.
R5	Opportunities to look at professional accreditation in computing programmes	<p>The school has previously investigated certification in areas such as</p> <ul style="list-style-type: none"> • COMPTIA Cloud Professional • XML Developer Certificate • Certified Associate in Project Management (CAPM) • Oracle Java Associate • Linux Essentials Certificate of Achievement (LPI) • Microsoft Certified Solutions Developer (MCSD) • COMPTIA N+ • ITIL • TESTING CERTIFCATE • CompTIA Security+ • MCTS .NET Framework 4, Web Applications • Microsoft Cloud Services Certification <p>The school will investigate the integration of professional certification in programmes through the school committee and academic council.</p>
R6	Formalise advisory panels across programmes	<p>The role of the industry advisory panel is to inform on the general strategic direction for the development of a programme. The academic members of the panel consists of the Dean, Vice Dean and course director responsible for the programme.</p> <p>Candidates for the industry panel should demonstrate knowledge, skills and expertise in the area of the programme. The candidates should be representative of the IT industry and may come from multinationals and small to medium based enterprises.</p> <p>The industry advisory panel reports into the school committee.</p>

2.4 Research

	Comment	Response
R1	Recommend research metrics as outputs and also detail current research activity in more depth	<p>The school is currently considering the adoption of metrics to measure the academic impact which may include worldwide academic advancement (high esteem publications), Innovative software methodologies (open source software), enhancing the knowledge economy (extra mural funding), and Training highly skilled researchers (successful level 9 and level 10 projects and research assistants). The metrics will be presented to research committee and academic council.</p> <p>Research in the School of Computing revolves around the building and evaluating of innovative solutions that support areas of Data Analytics / Big Data, Cloud Computing, Technology enhanced Learning (eLearning), Mobile computing & Internet of Things, Parallel & Distributed Computing.</p> <p>The School of Computing offers a structured MSc/PhD programme in Technology Enhanced Learning. This is over a 4 year period (2 years only for MSc by Research). Research in the area of Technology-enhanced learning aims to understand and define the components for the most appropriate pedagogical features for technology enhanced learning and research in their implementations. The technology implementations of this research are currently in the area of mobile, web and software applications. The School research activity and PhD programme has been supported by the setting up of the Research in Education and Learning Technologies (REALT) group, the National e-Learning Laboratory (NELL) and Cloud Competency Centre in the School. REALT pioneers research into interactive mobile and e-learning environments and NELL specialises in usability testing and user experience for human computer interactions. The Cloud Competency Centre in the School also provides prospective researchers to research the cloud technologies and environments for e-learning solutions.</p> <p>In addition, NCI is part of Dublin Region Innovation Consortium and has been progressing very well on the commercialisation agenda. NCI assigned IP back to Mr Daniel Breen based on his BSc 4th year project. Seven Enterprise Ireland Innovation Vouchers were also successfully delivered during the year.</p>
R2	Narrow cluster focus to enhance current strengths and competences	<p>The research clusters at the School of Computing focus on Data Analytics / Big Data, Cloud Computing, Technology enhanced Learning (eLearning), Mobile computing & Internet of Things, Parallel & Distributed Computing.</p>
R3	Formalise research partners in cluster areas to take advantage of funding opportunities	<p>The school is currently participating in two Horizon 2020 cost actions involving over 50 partners in Data Analytics / Big Data, Cloud Computing and Parallel & Distributed Computing.</p> <p>In addition the school is currently has submitted a horizon 2020 partnership with 15 partners in</p>

	Comment	Response
		Technology Enhanced Learning cluster. In addition the school will further investigate additional research partnerships in the area of the clusters and will present to the research committee.

2.5 Teaching, Learning and Assessment

	Comment	Response
R1	Ensure the programme classifications are aligned to relevant award standards	<p>The award standards have been made explicit in each programme. The programmes, MSc in Mobile Technologies, MSc in Web Technologies, MSc in Cloud Computing, BSc (Hons) in Computing, Higher Diploma in Web Technologies, Higher Certificate in Computing in Application Support, Certificate in Web Design that follow the computing standard have the following description has been included in the section Minimum Intended Learning Outcomes and & Award Standards: “The programme learning outcomes are based on the QQI award standards for computing at level X.” (Where X denotes the level of the programme.)</p> <p>The programmes, BSc (Hons) in Business Information Systems that follow the computing and business standard have the following description has been included in the section Minimum Intended Learning Outcomes and & Award Standards: “The programme learning outcomes are based on the QQI award standards for computing and the QQI award standards for business at level 8.”</p>
R2	Consider group work through an assessment centre day	The college will consider this recommendation through the learning and teaching committee and academic council.
R3	Ensure consistency in module requirements for attendance and assessment across the institute	<p>The college policy deals with assessment, external examination, assessment boards and learner progression. The specific policy titled “Guidelines for the correction, grading and submission of assessment” handles the issue of assessment.</p> <p>The college will consider this recommendation through the learning and teaching committee and academic council.</p>

2.6 Overall Conditions and Recommendations for School of Computing

	Comment	Response
C1	Constructively align a grid of assessment linked to learning outcomes at programme level –with consideration of optimum quantity and variety of assessment in light of refined learning outcomes.	A column titled "Outcomes addressed" has been added to the proposed assessment schedule of each programme. The Outcomes addressed describes the learning outcomes that are addressed by each module assessment component.
R1	Documentation should be reviewed to ensure that learning resources are current for all modules	<p>The learning resources of all modules were reviewed with changes made to the following modules</p> <ul style="list-style-type: none"> • Problem Solving and Programming Concepts • The Computing Industry • Web Design • Operating Systems • Computer Architecture • Digital Multimedia • IT Project Management • Fundamentals of Business Analysis • Business Entrepreneurship • Data Structures • Wireless Networking • Business Communication Skills • Introduction to Artificial Intelligence • Strategic Management • Web Services • Business Data Analysis • Cloud Computing • Distributed Systems • Business Process Management • Software Engineering • Computer Architecture Operating Systems Networking
R2	The involvement of the School of Computing in external QA should be	School of Computing faculty have been and are currently involved in a variety of external QA

	Comment	Response
	documented	<p>endeavours. These include acting as external examiners (Griffith College), external examiners for PhD students both internationally (Italy, India and the UK) and nationally (DIT and UCC), validation panels (e.g. ITB) and reviewing for conferences and journals.</p> <p>The School of computing involvement in external QA activities will be documented through School committee.</p>
R3	Document how conflicts are resolved in the interdisciplinary team projects	<p>The School understands the significant benefits for student involvement in team projects. However, the School also understands the structures required to enable team projects to be successful. To this end, on commencing team projects students receive induction which explores expectation around roles and responsibilities, common challenges and key skills. Additionally, team projects involve structured project timelines, continuous assessment and tight guidelines around individual contribution and credit for same. It is expected that with such structures in place the level and scale of conflict can be limited.</p> <p>However, if despite the aforementioned structures being in place conflict does arise there is a three phased process for conflict resolution. The first phase involves the team's supervisor encouraging team members to work together to overcome conflict. Empowering students to develop negotiation and team work skills is key to successful team projects.</p> <p>The second phase involves the supervisor acting as mediator. This may involve placing additional scaffolding to support members in developing the necessary team work skills depending on the issue at the centre of the conflict.</p> <p>Finally, in extreme and very rare circumstances if it is impossible to resolve the conflict through phases one or two the team may have to be disbanded, this may have an impact on student grades if some of the learning outcomes for the project module are around the demonstration of teamwork skills.</p>
R4	Describe how virtual programme team management is being used within the document and promote this across the School and College	<p>The teaching and learning strategy of each programme has been specifically updated to include virtual management techniques. The update states "Virtual team management techniques can be classified into two categories: instructional techniques and assessment techniques. Instructional techniques are used during the teaching process and may consist of:</p> <ul style="list-style-type: none"> · Independent Learning – learner's self-

	Comment	Response
		<p>directed learning using on-line, teaching material (e.g. Online video teaching a Learning Object, Moodle Lesson, flipped classroom) and other source (e.g. links to other materials)</p> <ul style="list-style-type: none"> · Online Actions – online activities that are time flexible such a forum discussions, Moodle pool and using social media · Collaboration – learner is collaborating with others using collaborative tools or Moodle Forum. Other forms are Github and Asana. GitHub is a version control and distributed collaboration solution that is freely available to everyone. GitHub allows you to track changes, add contributors to a project, basic task management and much more. GitHub usage is a requirement on the Web Design, Web Development and Multimedia modules, but is taught to students in their first week so that they can use it in any subject. Asana is a web and mobile application designed to enable teamwork without email. Through Asana students can create projects, assign tasks, set milestones and generate Gantt charts. Asana is taught to students in their first week, and they are encouraged to use it from then on. <p>Assessment techniques are used in the student evaluation process and may consist of:</p> <ul style="list-style-type: none"> · Electronic submission of the assessments –submissions are done though Moodle and Turnitin software. · in-class and/or over network (Internet) based technology presentations, · online Moodle quizzes and crosswords"
R5	Encourage learners to use e-portfolios so that their learning can be demonstrated in their professional life	The Computing Industry module has been modified to such that learners are required to build an e-portfolios. They will be shown how to store their work online by using an online resource such as google apps. This is essential in the first year as the student can add work from additional modules as they progress on their respective programmes such as Web Design and Digital Multimedia and so on.
R6	Make the use of Social Media more explicit in the programmes	Social Media has been incorporated into the content and module descriptor for Digital Multimedia. In addition, social media is explicit in the Public Relations and Social Media and, Business Intelligence and Analytics with Social Media modules.
R7	Build on leadership skills from level 6 to level 8	Leadership is included as a heading in the transferable skills matrix of each programme. The learning outcomes of each module that relates to leadership is specified in this column.
R8	Work in the Community and leadership should be promoted	<p>The school will continue to encourage the publication of conference papers to disseminate the results in the wider community.</p> <p>The school will provide academic and research</p>

	Comment	Response
		<p>leadership in emerging computing domains by creating new labs and programmes.</p> <p>The school will promote delivery of boot camps and workshops in the state of the art in technology such as cloud computing to the community.</p> <p>The above mentioned points are in addition to community projects that the School is involved in such as Discovering University Programme, Webmas, Charity Projects, NCI Student Innovation and Development Society.</p>

2.7 Certificate in Web Design

	Comment	Response
R1	Remove reference to Systems Analyst as a graduate profile for this programme	System analyst as a graduate profile has been removed from the Certificate in Web Design

2.8 Higher Certificate in Computing in Application & Support

	Comment	Response
C1	There should be greater focus on problem solving and hands-on skills	<p>The learning outcome for data communications has been updated with a focus on problem solving as follows “Transfer and apply theoretical concepts to problem solving in a range of data communications and networking contexts in the real world“. The teaching and learning strategy was updated as follows “1.1.4 Teaching & Learning Strategy</p> <p>The teaching strategy involves the use of lectures, tutorials, independent learning, class discussions and formative assessment as appropriate. Hands- on work will form an important part of the teaching strategy and a number of software packages will be used to give students an opportunity to work on problem solving using networking technologies in real-world scenarios. Additionally, learners will also have access to web based support.”</p> <p>Computer architecture has also being updated to include problem solving in the learning outcome “Diagnose and Correct device conflicts in relation to computer hardware by applying problem solving scenarios”.</p>
R1	More integrated assessment should be used across the programme	<p>Integrated assessment has been included in modules Introduction to Databases and Web Application Development.</p> <p>In addition integrated assessment will also be included in the modules Introduction to Mathematics for Business and Computing and Problem Solving and Programming Concepts.</p>
R2	Links should be built explicitly between the database and programming modules	<p>Introduction to Databases and Web Application Development are now changed to co-requisite modules where programming will take place in the web application development module. A joint project will use the data base from the Introduction to database module.</p>
R3	Rename the Web Authoring module	Module team have renamed module to Web Application Development

2.9 BSc (Hons) in Computing

	Comment	Response
R1	Document the nature of emerging technologies	The following modules have incorporated emerging technologies as a topic in the module descriptor: Introduction to programming Object Oriented Programming Data Structures Advanced Programming Web Design Software Applications for Business Digital Multimedia Introduction to data bases Data communications and networks Advanced Internet Technologies Introduction to AI Applied AI Cloud Computing
R2	Inclusion of a Research Methods Module	The team have debated the inclusion of a research methods as a as a separate module and have decided to retain it as a series of workshops in the Software Project. The workshops cover conducting literature reviews, Referencing, Technical/Scientific writing, Evaluation, Data pre-processing, Statistical analysis and presentation skills.
R3	Rename or remove the networking stream	Programme team discussed and agreed a new title change for the stream namely, Mobile Application Development.
R4	Consider classification of year 2 and 3	The programme team have decided to continue with the grade classification of 10% for year 2; 10% for year 3; and 80% for year 4. The programme team feels that this configuration motivates and rewards students for completing their studies at an early stage.
R5	Review the management and operation of the academic internship – can it be recorded in any other way	The following section was added to the programme organisation section of the BSc (Hons) in Computing and BSc (Hons) in Business Information Systems "Management of Academic Internship All students are required at the beginning of year 3, semester 1 to engage in the work placement process specified in the module descriptor. If the students do not secure a job before the beginning of year3, semester 2 an academic internship is provided to the students. The academic internship comprises three modules namely, Business Application Development, Application Lifecycle and Business Communication Skills. These modules are intrinsically interlinked and together their learning outcomes map into the same programme learning outcomes, work placement module’s learning outcomes map into. The Academic internship involves attending the classes schedule for three taught modules (Business Communication Skills, Application Lifecycle and Business Application development) and passing all the assessments associated with these modules. The three modules will be scheduled in such a manner as to have all instances of the internship are joined together in one class. That is students from full time and part time students on BSc (Hons) in Technology Management, BSc (Hons) in Computing and BSc (Hons) in Business Information Systems. The modules will be timetabled in such a manner that Business Communication Skills and Application Lifecycle are delivered in a block before the module Business Application development.

	Comment	Response
		<p>The Business Application Development module provides a practical real-world forum to practice the skills obtained in the Application Lifecycle and Business Communication Skills modules. The Application Lifecycle and Business Communication Skills modules equip students with the skills and knowledge necessary to complete the Business Application Development module. The inter-reliant nature of these modules may allow for some cross module assessment.</p> <p>The project completed as part of the Business Application Development module builds on the interdisciplinary project in stage 2 of the programme and the team project in stage 3 of the programme. In particular, the advanced nature of this project is two-fold. Firstly, the real-world nature of this project provides students with an opportunity to develop the skills necessary to support a positive business relationship with an external stakeholder, similarly to that required with work placement. Secondly, the requirement of a business plan to support project development allows for the development of an understanding of the holistic approach required for project development.</p> <p>The result of the assessment for each of the three modules is pass or fail.</p> <p>Students must pass all three modules of the academic internship. If one or more modules are not passed then all modules of the academic internship must be repeated in the next academic year in line with the repeat assessment strategy for the work placement."</p> <p>The following information was added to the QQI programme schedule for stage 3 "Special Regulations: Note 1: GE1 represent modules of the academic internship. These modules are intrinsically interlinked and together their learning outcomes correlate to those of the work placement. Note 2: Students must pass all three modules of the academic internship. If one or more modules are not passed then all modules of the academic internship must be repeated in the next academic year in line with the repeat assessment strategy for the work placement."</p>
R6	Review the repeat options for work placement	The following special regulation has been added to the QQI programme schedule stage 3 table. Special Regulations: Note 2: Students must pass all three modules of the academic internship. If one or more modules are not passed then all modules of the academic internship must be repeated in the next academic year in line with the repeat assessment strategy for the work placement.
R7	More integrated assessment should be used across the programme	Integrated assessment has been included in modules Introduction to Databases and Web Application Development. In addition integrated assessment will also be included in the modules Introduction to Mathematics for Business and Computing and Problem Solving and Programming Concepts .
R8	Links should be built explicitly between the database and programming modules	Introduction to Databases and Web Application Development are now changed to co-requisite modules where programming will take place in the web application development module. A joint project will use the data base from the Introduction to database module.
R9	Rename the Web Authoring module	Module team have renamed module to Web Application Development

2.10 BSc (Hons) in Business Information Systems

	Comment	Response
C1	Resolve the credit value for strategic management	Strategic Management is 5 credits. An additional module is added to year four namely, Enterprise Management of 5 credits.
C2	Justify the use of 'Business' in the title. Business should be made more explicit in the programme	A suite of business modules have been integrated into the programme as electives. They are as follows: - Year 1 semester 2 Operating Systems and Introduction to Marketing; - Year 3 semester 1 Advanced Internet Technologies and Introduction to ERP; - Year 4 semester 1, Business Data Analysis and Global Supply Chain Management. In addition Enterprise Management is added as a mandatory module in year 4.
R1	Elective options for the programme should be reviewed in conjunction with the School of Business	The following elective options are integrated into the programme: Year 1 semester 2 Operating Systems and Introduction to Marketing; Year 3 semester 1 Advanced Internet Technologies and Introduction to ERP; Year 4 semester 1, Business Data Analysis and Global Supply Chain Management.
R2	Systems analysis should be brought to the fore in Business Information Systems	The following description has been included in the description of the focus for year 2 of the BSc (Hons) in Business Information Systems: "Systems analysis is covered in the fundamentals of business analysis, software engineering, Introduction to databases, and Business Process Management. These modules cumulatively provide a systematic methodology for analysing a business problem or opportunity, determining what role, if any, computer-based technologies can play in addressing the business need, articulating business requirements for the technology solution, specifying alternative approaches to acquiring the technology capabilities needed to address the business requirements, and specifying the requirements for the information systems solution".
R3	Consider classification of year 2 and 3	The programme team have decided to continue with the grade classification of 10% for year 2; 10% for year 3; and 80% for year 4. The programme team feels that this configuration motivates and rewards students for completing their studies at an early stage.
R4	Review the management and operation of the academic internship – can it be recorded in any other way	The following section was added to the programme organisation section of the BSc (Hons) in Computing and BSc (Hons) in Business Information Systems "Management of Academic Internship All students are required at the beginning of year 3, semester 1 to engage in the work placement process specified in the module descriptor. If the students do not secure a job before the beginning of year3, semester 2 an academic internship is provided to the students. The academic internship comprises three modules namely, Business Application Development, Application Lifecycle and Business Communication Skills. These modules are intrinsically interlinked and together their learning outcomes map into the same programme learning outcomes, work placement module's learning outcomes map into. The Academic internship involves attending the classes schedule for three taught modules (Business Communication Skills, Application Lifecycle and Business Application development) and passing all the assessments associated with these modules. The three modules will be scheduled in such a manner as to have all instances of the

	Comment	Response
		<p>internship are joined together in one class. That is students from full time and part time students on BSc (Hons) in Technology Management, BSc (Hons) in Computing and BSc (Hons) in Business Information Systems. The modules will be timetabled in such a manner that Business Communication Skills and Application Lifecycle are delivered in a block before the module Business Application development.</p> <p>The Business Application Development module provides a practical real-world forum to practice the skills obtained in the Application Lifecycle and Business Communication Skills modules. The Application Lifecycle and Business Communication Skills modules equip students with the skills and knowledge necessary to complete the Business Application Development module. The inter-reliant nature of these modules may allow for some cross module assessment.</p> <p>The project completed as part of the Business Application Development module builds on the interdisciplinary project in stage 2 of the programme and the team project in stage 3 of the programme. In particular, the advanced nature of this project is two-fold. Firstly, the real-world nature of this project provides students with an opportunity to develop the skills necessary to support a positive business relationship with an external stakeholder, similarly to that required with work placement. Secondly, the requirement of a business plan to support project development allows for the development of an understanding of the holistic approach required for project development.</p> <p>The result of the assessment for each of the three modules is pass or fail.</p> <p>Students must pass all three modules of the academic internship. If one or more modules are not passed then all modules of the academic internship must be repeated in the next academic year in line with the repeat assessment strategy for the work placement."</p> <p>The following information was added to the QQI programme schedule for stage 3 "Special Regulations: Note 1: GE1 represent modules of the academic internship. These modules are intrinsically interlinked and together their learning outcomes correlate to those of the work placement. Note 2: Students must pass all three modules of the academic internship. If one or more modules are not passed then all modules of the academic internship must be repeated in the next academic year in line with the repeat assessment strategy for the work placement."</p>
R5	Review the repeat options for work placement	The following special regulation has been added to the QQI programme schedule stage 3 table. Special Regulations: Note 2: Students must pass all three modules of the academic internship. If one or more modules are not passed then all modules of the academic internship must be repeated in the next academic year in line with the repeat assessment strategy for the work placement.
R6	More integrated assessment should be used across the programme	Integrated assessment has been included in modules Introduction to Databases and Web Application Development. In addition integrated assessment will also be included in the modules Introduction to Mathematics for Business and Computing and Problem Solving and Programming Concepts .
R7	Links should be built explicitly between the database and programming	Introduction to Databases and Web Application Development are now changed to co-requisite modules where programming will take place in the web application development module. A joint project will use the data base from the Introduction to database module.

	Comment	Response
	modules	
R8	Rename the Web Authoring module	Module team have renamed module to Web Application Development

2.11 MSc in Cloud Computing, PG Diploma in Cloud Computing and Certificate in Cloud Computing for Business

Comment	Response				
R1	<p>The College should formally track the employability of postgraduate students and part-time students</p> <p>NCI formally track the employment of full time honours degree and full time MSc students 6 months after graduation. All graduates are included in the Alumni database. The college are investigating other options for tracking the employability of part-time students.</p>				
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	<p>and marketing departments at the start of each iteration of the MSc programme.</p> <p>Applicants whose first language is not English must attach a certified qualification of proficiency in English. The following qualifications presented in Table 8 will fulfil the College's minimum requirements for undergraduate programmes.</p> <p>TABLE 8 COLLEGE'S MINIMUM REQUIREMENTS ON CERTIFIED QUALIFICATION OF PROFICIENCY IN ENGLISH</p> <table border="1" data-bbox="560 488 1469 600"> <thead> <tr> <th data-bbox="560 488 703 555">IELTS</th> <th data-bbox="703 488 815 555">TOEFL (PBT)</th> <th data-bbox="815 488 927 555">TOEFL (CBT)</th> <th data-bbox="927 488 1038 555">TOEFL (IBT)</th> <th data-bbox="1038 488 1150 555">UCLES CPE</th> <th data-bbox="1150 488 1262 555">IRISH LEAVING CERTIFICATE</th> <th data-bbox="1262 488 1469 555">ETAPP</th> </tr> </thead> <tbody> <tr> <td data-bbox="560 555 703 600">6.0</td> <td data-bbox="703 555 815 600">600</td> <td data-bbox="815 555 927 600">220</td> <td data-bbox="927 555 1038 600">100</td> <td data-bbox="1038 555 1150 600">C</td> <td data-bbox="1150 555 1262 600">Ordinary "C"</td> <td data-bbox="1262 555 1469 600">C1</td> </tr> </tbody> </table> <p>Key: PBT – Paper-based Test; CBT – Computer-based Test; CPE – Certificate of Proficiency in English; ETAPP – English test for Academic and Professional Purposes.</p> <p>1.1.2 Access Processes Including Recognition of Prior Learning</p> <p>Candidates who do not hold a Computing Primary Degree may be considered based on relevant academic qualifications or extensive work experience. Non-standard applicants may have extensive work/life experiences, which allied to their own natural learning ability and commitment, would merit access to the third level system and credit within it for the learning gained through their work/life experiences. NCI has an RPL policy which is used as a guideline for this purpose.</p> <p>The term “learning” implies a conceptual as well as practical grasp of the knowledge or competence required. It should be applicable outside the environment in which it was acquired. Experience is not what is being evaluated but learning.</p> <p>Applications for RPL consideration are made directly to the College. All applicants seeking RPL entry are interviewed, and requested to produce a portfolio describing the prior experience in the context of potentially creditable learning outcomes. The portfolio is considered by the programme director and the RPL sub-committee of the Learning, Teaching and Assessment Committee. The learning gained is evaluated and matched with the learning outcomes of the module(s) from which the applicant may be exempted. The portfolio is evaluated and compared against the module to provide evidence of:</p> <ul style="list-style-type: none"> · Validity: Does the evidence supplied meet all/part of the outcomes/assessment criteria? · Sufficiency: Is the evidence sufficient proof of the outcomes or assessment criteria? · Currency: Is the evidence recent? NCI normally expects learners experience or qualifications have been gained within the last 3 years · Authenticity: Is the evidence provided the learners own work? <p>In assessing whether learning gained from experience matches learning outcomes for a particular module, the assessors apply the following criteria:</p> <ul style="list-style-type: none"> · Has the appropriate balance between theory and practical application been attained? · Is the learning achieved transferable? · Has the appropriate academic level of learning been achieved? <p>For candidates that do not hold a primary degree in a cognate or non-cognate area, they must exhibit the following levels of academic quality (Table 9) as outlined in the QQI Computing Awards Standards at level 8 on the National Framework of Qualifications.</p>	IELTS	TOEFL (PBT)	TOEFL (CBT)	TOEFL (IBT)	UCLES CPE	IRISH LEAVING CERTIFICATE	ETAPP	6.0	600	220	100	C	Ordinary "C"	C1
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R4	Options for presenting the viva to a wider group should be explored so that standards can be calibrated across programmes and practice shared	<p>The Research Project and Industry Research Project modules descriptors have been updated to include the option for presenting the Viva to a wider group. The following text has been added to the module descriptors:</p> <p>Projects Showcase</p> <p>A project showcase event will be organised after the students have submitted the required project documentation and the artefact/product developed. NCI academic staff and companies that operate in the domain of the MSc programme will be invited to the event. The role of the showcase event is to disseminate the students' project outcome and to encourage further collaboration with industry.</p>																		
R5	The composition of the MSc portfolio should be monitored to ensure that graduates and the programmes have a distinct identity	The school committee will monitor the MSc programmes to ensure that graduates and the programmes have a distinct identity.																		
R6	Appropriate case	The module's CA will comprise 1 or more team-based comparative																		

	Comment	Response
	studies should be used in Utility Computing so that students see the practical benefit of the module	case studies that encapsulate the theoretical aspects of utility computing as demonstrated in practice
R7	The title of the Certificate in Cloud Computing should be reconsidered due to the emphasis placed on business computing	Following the kind suggestion from the panel during programmatic review, the programme shall be renamed to “ Certificate in Cloud Computing for Business ”.

2.12 MSc in Web Technologies and PG Diploma in Web Technologies

Comment	Response						
R1	<p>The College should formally track the employability of postgraduate students and part-time students</p> <p>NCI formally track the employment of full time honours degree and full time MSc students 6 months after graduation. All graduates are included in the Alumni database. The college are investigating other options for tracking the employability of part-time students.</p>						
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R5	<p>The composition of the MSc portfolio should be monitored to ensure that graduates and the programmes have a distinct identity</p> <p>The school committee will monitor the MSc programmes to ensure that graduates and the programmes have a distinct identity.</p>																		

2.13 MSc in Mobile Technologies, PG Diploma in Mobile Technologies and Certificate in Application Development for Mobile Devices

	Comment	Response						
C1	The title of the Certificate in Mobile Technologies is changed to reflect the removal of security	The programme team decided to change the title to Certificate in Application Development for Mobile Devices.						
R1	The College should formally track the employability of postgraduate students and part-time students	NCI formally track the employment of full time honours degree and full time MSc students 6 months after graduation. All graduates are included in the Alumni database. The college are investigating other options for tracking the employability of part-time students.						
R2	The use of incubation companies as an option for projects should be further explored, however the panel commends the programme team for its caution to ensure that the student experience is optimum	The postgraduate programme teams proposed to create a forum with the aim to share ideas from companies in the incubation centre that require further investigation from a research perspective by academics in NCI. The ideas represent something tangible that the company requires but that they may not have the resources or time to do so. There is an expectation that the companies will have to provide some of their time with supporting the development of the idea at a later stage. The forum is typically a short session and would take place in the first semester of the academic year. The implementation of the ideas may take place in the research project or industry based research project. During the second semester a further session with the companies will take place. In this session, students give a two to three minute pitch of the approach they will take with implementing the companies' idea.						
R3	The application and interview process should be consistent across all programmes within the School and clear to prospective students	<p>The application and interview process is now consistent across the three MSc's (MSc in Web Technologies, MSc in Cloud Computing and MSc in Mobile Technologies) and has been updated under section "Outline of the Proposed Programme" as follows:</p> <table border="1" data-bbox="563 1346 1465 1693"> <thead> <tr> <th colspan="2" data-bbox="563 1346 1465 1375">Access Arrangements</th> </tr> </thead> <tbody> <tr> <td data-bbox="563 1375 1010 1666"> Min Academic Requirements Certified Qualification of Proficiency in English for International Students (from non-English speaking countries) </td> <td data-bbox="1010 1375 1465 1666"> Minimum Requirements An honours (level 8) primary degree in Computing or a cognate area with a 2.2 award or higher. An assessment and/or interview may be conducted to ascertain suitability if necessary. Recognition of Prior Learning Applications may also be considered under the Colleges Recognition of Prior Learning process. Academic IELTS 6.0 </td> </tr> <tr> <td data-bbox="563 1666 1010 1693">Work Experience</td> <td data-bbox="1010 1666 1465 1693">none</td> </tr> </tbody> </table> <p>The following section (Access) is included in all three MSc's after section RATIONALE FOR THE PROGRAMME :- Access All applicants will be assessed for entry based on the academic requirements for the programme. An assessment and/or interview may be conducted to ascertain suitability if necessary. Learners from non-cognate areas are eligible to apply for this programme and are assessed by the Colleges Recognition of Prior Learning process. 1.1.1 Access Criteria The normal entry requirement for this course is a Level 8 degree with</p>	Access Arrangements		Min Academic Requirements Certified Qualification of Proficiency in English for International Students (from non-English speaking countries)	Minimum Requirements An honours (level 8) primary degree in Computing or a cognate area with a 2.2 award or higher. An assessment and/or interview may be conducted to ascertain suitability if necessary. Recognition of Prior Learning Applications may also be considered under the Colleges Recognition of Prior Learning process. Academic IELTS 6.0	Work Experience	none
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Work Experience	none							

Comment	Response														
	<p>a 2.2 award or higher in Computing. Learners must also be in a position to have their own mobile device (e.g. laptop, notebook, tablet PC) with a minimum required specification. This specification will be communicated to each potential learner through both the admissions and marketing departments at the start of each iteration of the MSc in Mobile Technologies programme.</p> <p>Applicants whose first language is not English must attach a certified qualification of proficiency in English. The following qualifications presented in Table 8 will fulfil the College's minimum requirements for undergraduate programmes.</p> <p>TABLE 8 COLLEGE'S MINIMUM REQUIREMENTS ON CERTIFIED QUALIFICATION OF PROFICIENCY IN ENGLISH</p> <table border="1" data-bbox="560 611 1469 723"> <thead> <tr> <th data-bbox="560 611 667 689">IELTS</th> <th data-bbox="667 611 774 689">TOEFL (PBT)</th> <th data-bbox="774 611 880 689">TOEFL (CBT)</th> <th data-bbox="880 611 987 689">TOEFL (IBT)</th> <th data-bbox="987 611 1094 689">UCLES CPE</th> <th data-bbox="1094 611 1201 689">IRISH LEAVING CERTIFICATE</th> <th data-bbox="1201 611 1469 689">ETAPP</th> </tr> </thead> <tbody> <tr> <td data-bbox="560 689 667 723">6.0</td> <td data-bbox="667 689 774 723">600</td> <td data-bbox="774 689 880 723">220</td> <td data-bbox="880 689 987 723">100</td> <td data-bbox="987 689 1094 723">C</td> <td data-bbox="1094 689 1201 723">Ordinary "C"</td> <td data-bbox="1201 689 1469 723">C1</td> </tr> </tbody> </table> <p>Key: PBT – Paper-based Test; CBT – Computer-based Test; CPE – Certificate of Proficiency in English; ETAPP – English test for Academic and Professional Purposes.</p> <p>1.1.2 Access Processes Including Recognition of Prior Learning Candidates who do not hold a Computing Primary Degree may be considered based on relevant academic qualifications or extensive work experience. Non-standard applicants may have extensive work/life experiences, which allied to their own natural learning ability and commitment, would merit access to the third level system and credit within it for the learning gained through their work/life experiences. NCI has an RPL policy which is used as a guideline for this purpose.</p> <p>The term “learning” implies a conceptual as well as practical grasp of the knowledge or competence required. It should be applicable outside the environment in which it was acquired. Experience is not what is being evaluated but learning.</p> <p>Applications for RPL consideration are made directly to the College. All applicants seeking RPL entry are interviewed, and requested to produce a portfolio describing the prior experience in the context of potentially creditable learning outcomes. The portfolio is considered by the programme director and the RPL sub-committee of the Learning, Teaching and Assessment Committee. The learning gained is evaluated and matched with the learning outcomes of the module(s) from which the applicant may be exempted. The portfolio is evaluated and compared against the module to provide evidence of:</p> <ul style="list-style-type: none"> · Validity: Does the evidence supplied meet all/part of the outcomes/assessment criteria? · Sufficiency: Is the evidence sufficient proof of the outcomes or assessment criteria? · Currency: Is the evidence recent? NCI normally expects learners experience or qualifications have been gained within the last 3 years · Authenticity: Is the evidence provided the learners own work? <p>In assessing whether learning gained from experience matches learning outcomes for a particular module, the assessors apply the following criteria:</p> <ul style="list-style-type: none"> · Has the appropriate balance between theory and practical application been attained? · Is the learning achieved transferable? · Has the appropriate academic level of learning been achieved? <p>For candidates that do not hold a primary degree in a cognate or non-cognate area, they must exhibit the following levels of academic</p>	IELTS	TOEFL (PBT)	TOEFL (CBT)	TOEFL (IBT)	UCLES CPE	IRISH LEAVING CERTIFICATE	ETAPP	6.0	600	220	100	C	Ordinary "C"	C1
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Comment		Response																		
		<p>quality (Table 9) as outlined in the QQI Computing Awards Standards at level 8 on the National Framework of Qualifications.</p> <p>TABLE 9 QQI COMPUTING AWARDS STANDARDS AT LEVEL 8 ON THE NATIONAL FRAMEWORK OF QUALIFICATIONS</p> <table border="1"> <thead> <tr> <th>Area</th> <th>DESCRIPTION</th> </tr> </thead> <tbody> <tr> <td>Knowledge - breadth</td> <td>An understanding of the theory, concepts and methods pertaining to a field (or fields) of learning</td> </tr> <tr> <td>Knowledge - kind</td> <td>Detailed knowledge and understanding in one or more specialised Computing areas, some of it at the current boundaries of the field(s)</td> </tr> <tr> <td>Know-how and skill - range</td> <td>Demonstrate mastery of a complex and specialised area of skills and tools; use and modify advanced skills and tools to conduct closely guided research, professional or advanced technical activity.</td> </tr> <tr> <td>Know-how and skill - selectivity</td> <td>Exercise appropriate judgement in a number of complex planning, design, technical and/or management functions related to products, services, operations or processes, including resourcing,</td> </tr> <tr> <td>Competence - context</td> <td>Use advanced skills to conduct research, or advanced technical or professional activity, accepting accountability for all related decision making; transfer and apply diagnostic and creative skills in a range of contexts</td> </tr> <tr> <td>Competence - role</td> <td>Act effectively under guidance in a peer relationship with qualified practitioners; lead multiple, complex and heterogeneous groups</td> </tr> <tr> <td>Competence – learning to learn</td> <td>Learn to act in variable and unfamiliar learning contexts; learn to manage learning tasks independently, professionally and ethically</td> </tr> <tr> <td>Competence - insight</td> <td>Express a comprehensive, internalised, personal world view manifesting solidarity with others.</td> </tr> </tbody> </table>	Area	DESCRIPTION	Knowledge - breadth	An understanding of the theory, concepts and methods pertaining to a field (or fields) of learning	Knowledge - kind	Detailed knowledge and understanding in one or more specialised Computing areas, some of it at the current boundaries of the field(s)	Know-how and skill - range	Demonstrate mastery of a complex and specialised area of skills and tools; use and modify advanced skills and tools to conduct closely guided research, professional or advanced technical activity.	Know-how and skill - selectivity	Exercise appropriate judgement in a number of complex planning, design, technical and/or management functions related to products, services, operations or processes, including resourcing,	Competence - context	Use advanced skills to conduct research, or advanced technical or professional activity, accepting accountability for all related decision making; transfer and apply diagnostic and creative skills in a range of contexts	Competence - role	Act effectively under guidance in a peer relationship with qualified practitioners; lead multiple, complex and heterogeneous groups	Competence – learning to learn	Learn to act in variable and unfamiliar learning contexts; learn to manage learning tasks independently, professionally and ethically	Competence - insight	Express a comprehensive, internalised, personal world view manifesting solidarity with others.
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R4	Options for presenting the viva to a wider group should be explored so that standards can be calibrated across programmes and practice shared	<p>The Research Project and Industry Research Project modules descriptors have been updated to include the option for presenting the Viva to a wider group. The following text has been added to the module descriptors:</p> <p>Projects Showcase</p> <p>A project showcase event will be organised after the students have submitted the required project documentation and the artefact/product developed. NCI academic staff and companies that operate in the domain of the MSc programme will be invited to the event. The role of the showcase event is to disseminate the students' project outcome and to encourage further collaboration with industry.</p>																		
R5	The composition of the MSc portfolio should be monitored to ensure that graduates and the programmes have	The school committee will monitor the MSc programmes to ensure that graduates and the programmes have a distinct identity.																		

	Comment	Response
	a distinct identity	

2.14 Higher Diploma in Web Technologies, Certificate in Web Technologies

Comment	Response						
R1	<p>The College should formally track the employability of postgraduate students and part-time students</p> <p>NCI formally track the employment of full time honours degree and full time MSc students 6 months after graduation. All graduates are included in the Alumni database. The college are investigating other options for tracking the employability of part-time students.</p>						
R2	<p>The use of incubation companies as an option for projects should be further explored, however the panel commends the programme team for its caution to ensure that the student experience is optimum</p> <p>The postgraduate programme teams proposed to create a forum with the aim to share ideas from companies in the incubation centre that require further investigation from a research perspective by academics in NCI. The ideas represent something tangible that the company requires but that they may not have the resources or time to do so. There is an expectation that the companies will have to provide some of their time with supporting the development of the idea at a later stage. The forum is typically a short session and would take place in the first semester of the academic year. The implementation of the ideas may take place in the research project or industry based research project. During the second semester a further session with the companies will take place. In this session, students give a two to three minute pitch of the approach they will take with implementing the companies' idea.</p>						
R3	<p>The application and interview process should be consistent across all programmes within the School and clear to prospective students</p> <p>The application and interview process is consistent across the Higher Diplomas and has been updated under section "Outline of the Proposed Programme" as follows:</p> <table border="1" data-bbox="560 1088 1469 1391"> <thead> <tr> <th colspan="2" data-bbox="560 1088 1469 1117">Access Arrangements</th> </tr> </thead> <tbody> <tr> <td data-bbox="560 1117 1007 1368">Min Academic Requirements</td> <td data-bbox="1011 1117 1469 1368"> <p>Minimum Requirements A level 8 degree or its equivalent in a non-cognate discipline. Non-standard applications will be also considered on an individual basis.</p> <p>Recognition of Prior Learning Learners from non-cognate areas are eligible to apply for this programme and are assessed by the Colleges Recognition of Prior Learning process.</p> </td> </tr> <tr> <td data-bbox="560 1375 1007 1391">Work Experience</td> <td data-bbox="1011 1375 1469 1391">No</td> </tr> </tbody> </table> <p>The following section (Access) is included in all HDips after section RATIONALE FOR THE PROGRAMME :- Access All applicants will be assessed for entry based on the academic requirements for the programme. An assessment and/or interview may be conducted to ascertain suitability if necessary. 1.1.1 Access Criteria The normal entry requirement for this course is a Level 8 degree. Learners from non-cognate areas are welcome to apply for this programme and need only display a comfort and willingness to engage with technical challenges. Applicants whose first language is not English must attach a certified qualification of proficiency in English. The following qualifications presented in Error! Reference source not found. will fulfil the College's minimum requirements for undergraduate programmes.</p>	Access Arrangements		Min Academic Requirements	<p>Minimum Requirements A level 8 degree or its equivalent in a non-cognate discipline. Non-standard applications will be also considered on an individual basis.</p> <p>Recognition of Prior Learning Learners from non-cognate areas are eligible to apply for this programme and are assessed by the Colleges Recognition of Prior Learning process.</p>	Work Experience	No
Access Arrangements							
Min Academic Requirements	<p>Minimum Requirements A level 8 degree or its equivalent in a non-cognate discipline. Non-standard applications will be also considered on an individual basis.</p> <p>Recognition of Prior Learning Learners from non-cognate areas are eligible to apply for this programme and are assessed by the Colleges Recognition of Prior Learning process.</p>						
Work Experience	No						

Comment	Response														
	<p data-bbox="560 226 1469 277">TABLE 8 COLLEGE'S MINIMUM REQUIREMENTS ON CERTIFIED QUALIFICATION OF PROFICIENCY IN ENGLISH</p> <table border="1" data-bbox="560 297 1469 412"> <thead> <tr> <th data-bbox="560 297 667 371">IELTS</th> <th data-bbox="667 297 799 371">TOEFL (PBT)</th> <th data-bbox="799 297 932 371">TOEFL (CBT)</th> <th data-bbox="932 297 1064 371">TOEFL (IBT)</th> <th data-bbox="1064 297 1197 371">UCLES CPE</th> <th data-bbox="1197 297 1329 371">IRISH LEAVING CERTIFICATE</th> <th data-bbox="1329 297 1469 371">ETAPP</th> </tr> </thead> <tbody> <tr> <td data-bbox="560 371 667 412">6.0</td> <td data-bbox="667 371 799 412">600</td> <td data-bbox="799 371 932 412">220</td> <td data-bbox="932 371 1064 412">100</td> <td data-bbox="1064 371 1197 412">C</td> <td data-bbox="1197 371 1329 412">Ordinary "C"</td> <td data-bbox="1329 371 1469 412">C1</td> </tr> </tbody> </table> <p data-bbox="560 443 1469 533">Key: PBT – Paper-based Test; CBT – Computer-based Test; CPE – Certificate of Proficiency in English; ETAPP – English test for Academic and Professional Purposes.</p> <p data-bbox="560 539 1469 786">Access Processes Including Recognition of Prior Learning In exceptional cases, candidates who do not hold a Primary Degree may be considered based on extensive relevant work experience. Non-standard applicants may have intensive work/life experiences, which allied to their own natural learning ability and commitment would merit access to the third level system and credit within it for the learning gained through their work/life experiences. NCI has an RPEL policy which is used as a guideline for this purpose.</p> <p data-bbox="560 792 1469 909">The term “learning” implies a conceptual as well as practical grasp of the knowledge or competence required. It should be applicable outside the environment in which it was acquired. Experience is not what is being evaluated but learning.</p> <p data-bbox="560 916 1469 1032">Applications for RPEL consideration are made directly to the college. All applicants seeking RPEL entry are interviewed. Applicants are requested to produce a portfolio describing the prior experience in the context of potentially creditable learning outcomes.</p> <p data-bbox="560 1039 1469 1193">The portfolio when received by the college is considered by the programme director and the RPEL sub-committee of the Learning Teaching and Assessment Committee. The learning gained is evaluated and matched with the learning outcomes of the module(s) from which the applicant may be exempted.</p> <p data-bbox="560 1200 1469 1252">The portfolio is evaluated and compared against the module to provide evidence of:</p> <ul data-bbox="703 1258 1469 1579" style="list-style-type: none"> • Validity: Does the evidence supplied meet all or part of the outcomes or assessment criteria? • Sufficiency: Is the evidence sufficient proof the outcomes or assessment criteria? • Currency: Is the evidence recent? NCI normally expects students experience or qualifications have been gained within the last 3 years • Authenticity: Is the evidence provided the students own work? <p data-bbox="560 1644 1469 1733">In assessing whether learning gained from experience matches learning outcomes for a particular module, the assessors apply the following criteria:</p> <ul data-bbox="655 1740 1469 1912" style="list-style-type: none"> • Has the appropriate balance between theory and practical application been attained? • Is the learning achieved transferable? • Has the appropriate academic level of learning been achieved? <p data-bbox="560 1951 1469 2031">For candidates that do not hold a primary degree in a cognate or non-cognate area, they must exhibit the following levels of learning as outlined in the HETAC Awards Standards:</p>	IELTS	TOEFL (PBT)	TOEFL (CBT)	TOEFL (IBT)	UCLES CPE	IRISH LEAVING CERTIFICATE	ETAPP	6.0	600	220	100	C	Ordinary "C"	C1
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R4	Readings and resources for all modules should be reviewed to ensure currency	<p>The following modules were identified and updated to ensure currency:</p> <p>Object Oriented Software Engineering</p> <p>Computer Architecture, Operating Systems and Networking</p>																		
R5	Rename the Web Authoring module	Module team have renamed module to Web Application Development																		

3 Panel Acceptance of Programme Team Response

Reaction of the Panel to the Programme Team Response

I have read the amended submission documents for the

MSc/ Postgraduate Diploma in Science in Cloud Computing
 Certificate in Cloud Computing for Business
 MSc/ Postgraduate Diploma in Science in Web Technologies
 MSc/ Postgraduate Diploma in Science in Mobile Technologies
 Certificate in Application Development for Mobile Devices

Higher Diploma in Science in Web Technologies/ Certificate in Web Technologies

BSc Honours in Computing
 BSc Honours in Business Information Systems
 Higher Certificate in Computing Applications and Support

Certificate in Web Design
 Certificate in Web Development

I have received feedback from the members of the other external review panel who have also received and reviewed the amended documentation.. I can state that it addresses in a satisfactory manner, all the conditions made by the panel.

Therefore we recommend these programmes for revalidation to QQI.

Signed on behalf of the external review panel

Mr David Denieffe
 Chair

Date:



19th May 2015

4 Programme Schedules

4.1 B.Sc. (Hons) in Business Information Systems

4.1.1 Programme Schedule for Stage 1

Name of Provider		National College of Ireland		Programme Codes		BSHBIS					
Programme Title (i.e. named award)		BSc (Hons) in Business Information Systems									
Award Title (HETAC named award)		Bachelor of Science (Hons)									
Stage Exit Award Title		FT/PT/ACCS/BLENDED									
Modes of Delivery (FT/PT/ACCS/BLENDED/OC etc)		FT/PT/ACCS/BLENDED									
Stage	1		Number of Stages		4						
Award Class			Award NQF Level		8						
Award EQF Level	6		Stage Credits (ECTS)		60						
Stage NQF Level			Stage EQF Level								
Date Effective		14/09/15									
Ref	Module Title	Semester	Module Status (M/E)	NQF Level	ECTS Credit Number	Total Student Effort Total Hours	Contact Hours	Independent Learning	Course Work %	End of Module Formal Examination %	Total %
1.1	Introduction to Mathematics for Business & Computing	1	M	6	5	125	36	89	50	50	100.00
1.2	Managing Your Learning	1	M	6	5	125	36	89	100	0	100.00
1.3	Problem Solving and Programming Concepts	1	M	6	5	125	48	77	100	0	100.00
1.4	Web Design	1	M	6	10	250	72	178	50	50	100.00
1.5	The Computing Industry	1	M	6	5	125	36	89	100	0	100.00
1.6	Digital Multimedia	2	M	6	10	250	72	178	100	0	100.00
1.7	Operating Systems	2	E	6	5	125	36	89	50	50	100.00
1.8	Introduction to Programming	2	M	6	5	125	48	77	50	50	100.00
1.9	Computer Architecture	2	M	6	5	125	36	89	50	50	100.00
1.10	Software Applications for	2	M	6	5	125	36	89	100	0	100.00

1.11	Business Introduction to Marketing	2	E	6	5	125	36	89	50	50	100
Special Regulations:											
None											

4.1.2 Programme Schedule for Stage 2

Name of Provider		National College of Ireland					Programme Codes		BSHBIS		
Programme Title (i.e. named award)		BSc (Hons) in Business Information Systems									
Award Title (HETAC named award)		Bachelor of Science (Hons)									
Stage Exit Award Title		FT/PT/ACCS/BLENDED									
Modes of Delivery (FT/PT/ACCS/BLENDED/OC etc)		FT/PT/ACCS/BLENDED									
Stage		2		Number of Stages		4					
Award Class				Award NQF Level		8					
Award EQF Level		6		Stage Credits (ECTS)		60					
Stage NQF Level				Stage EQF Level							
Date Effective		14/09/15									
Ref	Module Title	Semester	Module Status (M/E)	NQF Level	ECTS Credit Number	Total Student Effort		Allocation of Marks			
						Total Hours	Contact Hours	Independent Learning	Course Work %	End of Module Formal Examination %	Total %
2.1	Web Application Development	1	M	6	10	250	72	178	100	0	100.00
2.2	Object Oriented Programming	1	M	6	5	125	48	77	100	0	100.00
2.3	IT Project Management	1	M	6	5	125	36	89	40	60	100.00
2.4	Fundamentals of Business Analysis	1	M	6	5	125	36	89	50	50	100.00
2.5	Introduction to Databases	1	M	6	5	125	36	89	50	50	100.00
2.6	Data Communications and Networking	2	M	6	5	125	36	89	40	60	100.00
2.7	Software Engineering	2	M	6	5	125	36	89	100	0	100.00
2.8	Business Entrepreneurship	2	M	6	5	125	36	89	30	70	100.00
2.9	Interdisciplinary Team Project	2	M	6	10	250	72	178	100	0	100.00
2.10	Management Information Systems	2	M	6	5	125	36	89	50	50	100.00
Special Regulations:		None									

4.1.3 Programme Schedule for Stage 3

Name of Provider		National College of Ireland		Programme Codes		BSHBIS					
Programme Title (i.e. named award)		BSc (Hons) in Business Information Systems									
Award Title (HETAC named award)		Bachelor of Science (Hons)									
Stage Exit Award Title		FT/PT/ACCS/BLENDED									
Modes of Delivery (FT/PT/ACCS/BLENDED/OC etc)		FT/PT/ACCS/BLENDED									
Stage	3	Number of Stages		4		8					
Award Class	6	Award NQF Level		Stage Credits (ECTS)		60					
Stage EQF Level	14/09/15	ISCED Subject Code									
Date Effective											
Ref	Module Title	Semester	Module Status (M/E)	Total Student Effort		Allocation of Marks		Total %			
				ECTS Credit Number	QF Level	Independent Learning	Course Work %		End of Module Formal Examination %		
3.1	Advanced Databases	1	M	5	7	125	36	89	50	50	100.00
3.2	Team Project	1	M	10	7	250	72	178	100	0	100.00
3.3	Advanced Internet Technologies	1	E	5	7	125	36	89	100	0	100.00
3.4	Business Intelligence and Data Warehousing I	1	M	5	7	125	48	77	40	60	100.00
3.5	Enterprise Architecture	1	M	5	7	125	36	89	40	60	100.00
3.6	Introduction to ERP	1	E	5	7	125	36	89	50	50	100.00
3.7	Work Placement	2	GE2	30	7	750		750	100	0	100.00
3.8	Business Communication Skills	2	GE1	10	7	250	72	178	100	0	100.00
3.9	Application Lifecycle	2	GE1	10	7	250	48	202	100	0	100.00
3.10	Business Application Development	2	GE1	10	7	250	72	178	100	0	100.00
Special Regulations:											

Note 1: GEI represent modules of the academic internship. These modules are intrinsically interlinked and together their learning outcomes correlate to those of the work placement.

Note 2: Students must pass all three modules of the academic internship. If one or more modules are not passed then all modules of the academic internship must be repeated in the next academic year in line with the repeat assessment strategy for the work placement.

4.1.4 Programme Schedule for Stage 4

Name of Provider		National College of Ireland		Programme Codes		BSHBIS				
Programme Title (i.e. named award)		BSc (Hons) in Business Information Systems								
Award Title (HETAC named award)		Bachelor of Science (Hons)								
Stage Exit Award Title		FT/PT/ACCS/BLENDED								
Modes of Delivery (FT/PT/ACCS/BLENDED/OC etc)		FT/PT/ACCS/BLENDED								
Stage	4	Number of Stages		4						
Award Class		Award NQF Level		8						
Award EQF Level	6	Stage Credits (ECTS)		60						
Stage NQF Level		Stage EQF Level								
Date Effective	14/09/15	ISCED Subject Code								
Ref	Module Title	Semester	Module Status (M/E)	ECTS Credit Number	Total Student Effort Total Hours	Contact Hours	Independent Learning	Allocation of Marks Course Work %	End of Module Formal Examination %	Total %
4.1	Software Project	1 & 2	M	20	500	132	368	100	0	100.00
4.2	Business Data Analysis	1	E	5	125	36	89	50	50	100.00
4.3	Strategic Management	1	M	5	125	36	89	30	70	100.00
4.4	Business and Network Security	1	M	5	125	36	89	30	70	100.00
4.5	Business Intelligence and Data Warehousing II	1	M	5	125	48	77	60	40	100.00
4.6	Global Supply Chain Management	1	E	5	125	36	89	50	50	100.00
4.7	Business Process Management	2	M	10	250	48	202	30	70	100.00
4.8	Information Systems Management	2	M	5	125	36	89	30	70	100.00
4.9	Advanced	2	E	5	125	36	89	40	60	100

4.2 B.Sc. (Hons) in Computing

4.2.1 Programme Schedule for Stage 1

Name of Provider		National College of Ireland		Programme Codes		BSHC				
Programme Title (i.e. named award)		BSc (Honours) in Computing								
Award Title (HETAC named award)		Bachelor of Science (Hons)								
Stage Exit Award Title		FT/PT/ACCS/BLENDED								
Modes of Delivery (FT/PT/ACCS/BLENDED/OC etc.)		FT/PT/ACCS/BLENDED								
Stage		Number of Stages		Award NQF Level		8				
Award Class		Stage Credits (ECTS)		Stage EQF Level		60				
Stage NQF Level		ISCED Subject Code								
Date Effective		14/09/15								
Ref	Module Title	Semester	Module Status (M/E)	ECTS		Total Student Effort		Allocation of Marks	End of Module Formal Examination %	Total %
				NQF Level	Credit Number	Contact Hours	Independent Learning			
1.1	Introduction to Mathematics for Business & Computing	1	M	6	5	36	89	50	50	100.00
1.2	The Computing Industry	1	M	6	5	36	89	100	0	100.00
1.3	Managing Your Learning	1	M	6	5	36	89	100	0	100.00
1.4	Problem Solving and Programming Concepts	1	M	6	5	48	77	100	0	100.00
1.5	Web Design	1	M	6	10	72	178	50	50	100.00
1.6	Introduction to Programming	2	M	6	5	48	77	50	50	100.00
1.7	Operating Systems	2	M	6	5	36	89	50	50	100.00
1.8	Software Applications for Business	2	M	6	5	36	89	100	0	100.00
1.9	Computer Architecture	2	M	6	5	36	89	50	50	100.00
1.10	Digital Multimedia	2	M	6	10	72	178	100	0	100.00
Special Regulations:										
None										

4.2.2 Programme Schedule for Stage 2

Name of Provider		National College of Ireland		Programme Codes		BSHC					
Programme Title (i.e. named award)		BSc (Honours) in Computing									
Award Title (HETAC named award)		Bachelor of Science (Hons)									
Stage Exit Award Title		FT/PT/ACCS/BLENDED									
Modes of Delivery (FT/PT/ACCS/BLENDED/OC etc)		FT/PT/ACCS/BLENDED									
Stage		2		Number of Stages		4					
Award Class		Award NQF Level		8		8					
Award EQF Level		6		Stage Credits (ECTS)		60					
Stage NQF Level		8		Stage EQF Level							
Date Effective		14/09/15									
Ref	Module Title	Semester	Module Status (M/E)	NQF Level	ECTS Credit Number	Total Student Effort Total Hours	Contact Hours	Independent Learning	Course Work %	End of Module Formal Examination %	Total %
2.1	Introduction to Databases	1	M	6	5	125	36	89	50	50	100.00
2.2	Web Application Development	1	M	6	10	250	72	178	100	0	100.00
2.3	Object Oriented Programming	1	M	6	5	125	48	77	100	0	100.00
2.4	IT Project Management	1	M	6	5	125	36	89	40	60	100.00
2.5	Fundamentals of Business Analysis	1	M	6	5	125	36	89	50	50	100.00
2.6	Business Entrepreneurship	2	M	6	5	125	36	89	30	70	100.00
2.7	Data Communications and Networking	2	M	6	5	125	36	89	40	60	100.00
2.8	Interdisciplinary Team Project	2	M	6	10	250	72	178	100	0	100.00
2.9	Data Structures	2	M	6	5	125	48	77	50	50	100.00
2.10	Software Engineering	2	M	6	5	125	36	89	100	0	100.00
Special Regulations:											
None											

4.2.3 Programme Schedule for Stage 3

Name of Provider		National College of Ireland		Programme Codes		BSHC				
Programme Title (i.e. named award)		BSc (Honours) in Computing								
Award Title (HETAC named award)		Bachelor of Science (Hons)								
Stage Exit Award Title		FT/PT/ACCS/BLENDED								
Modes of Delivery (FT/PT/ACCS/BLENDED/OC etc)		FT/PT/ACCS/BLENDED								
Stage		3		Number of Stages		4				
Award Class				Award NQF Level		8				
Award EQF Level		6		Stage Credits (ECTS)		60				
Stage NQF Level		8		Stage EQF Level						
Date Effective		14/09/15		ISCED Subject Code						
Ref	Module Title	Semester	Module Status (M/E)	ECTS Credit Number	Total Student Effort Total Hours	Contact Hours	Independent Learning	Allocation of Marks Course Work %	End of Module Formal Examination %	Total %
3.1	Advanced Programming	1	M	5	125	48	77	50	50	100.00
3.2	Advanced Internet Technologies	1	M	5	125	36	89	100	0	100.00
3.3	Advanced Databases	1	M	5	125	36	89	50	50	100.00
3.4	Team Project	1	M	10	250	72	178	100	0	100.00
3.5	Wireless Networking	1	E	5	125	36	89	40	60	100.00
3.6	Business Communication Skills	2	GE1	10	250	72	178	100	0	100.00
3.7	Application Lifecycle	2	GE1	10	250	48	202	100	0	100.00
3.8	Business Application Development	2	GE1	10	250	72	178	100	0	100.00
3.9	Work Placement	2	GE2	30	750		750	100	0	100.00

Special Regulations:

Note 1 : GEI represent modules of the academic internship. These modules are intrinsically interlinked and together their learning outcomes correlate to those of the work placement.

Note 2: Students must pass all three modules of the academic internship. If one or more modules are not passed then all modules of the academic internship must be repeated in the next academic year in line with the repeat assessment strategy for the work placement.

4.2.4 Programme Schedule for Stage 4

Name of Provider		National College of Ireland		Programme Codes		BSHC				
Programme Title (i.e. named award)		BSc (Honours) in Computing								
Award Title (HETAC named award)		Bachelor of Science (Hons)								
Stage Exit Award Title		FT/PT/ACCS/BLENDED								
Modes of Delivery (FT/PT/ACCS/BLENDED/OC etc)		4		Number of Stages		4				
Award Class		Award NQF Level		Award NQF Level		8				
Stage EQF Level		6		Stage Credits (ECTS)		60				
Stage NQF Level		8		Stage EQF Level						
Date Effective		14/09/15		ISCED Subject Code						
Ref	Module Title	Semester	Module Status (M/E)	ECTS Credit Number	Total Student Effort Total Hours	Contact Hours	Independent Learning	Course Work %	End of Module Formal Examination %	Total %
4.1	Software Project	1 & 2	M	20	500	48	452	100	0	100.00
4.2	Introduction to Artificial Intelligence	1	M	5	125	36	89	40	60	100.00
4.3	Strategic Management	1	M	5	125	36	89	30	70	100.00
4.4	Web Services and API Development	1	M	5	125	36	89	75	25	100.00
4.5	Multimedia and Mobile Application Development	1	E	5	125	36	89	40	60	100.00
4.6	Business Data Analysis	1	E	5	125	36	89	50	50	100.00
4.7	Computer Graphics Design and Animation	1	E	5	125	36	89	50	50	100.00
4.8	Cloud Computing	1	E	5	125	36	89	0	100	100.00
4.9	Business and Network Security	1	E	5	125	36	89	30	70	100.00
4.10	Data Application	1	E	5	125	48	77	100	0	100.00

	Development																	
4.12	Distributed Systems	2	E	8	5	125	36	89	75	25	100.00							
4.13	Advanced Mobile Application Development	2	E	8	5	125	36	89	100	0	100.00							
4.14	Data and Web Mining	2	E	8	10	250	48	202	50	50	100.00							
4.15	Advanced Business Data Analysis	2	E	8	5	125	36	89	40	60	100.00							
4.16	Usability Design	2	E	8	5	125	24	101	100	0	100.00							
4.17	Cloud Application Development	2	E	8	5	125	36	89	100	0	100.00							
4.18	Cloud Gaming	2	E	8	5	125	36	89	40	60	100.00							
4.19	Applied Artificial Intelligence	2	E	8	5	125	36	89	50	50	100.00							
4.20	Computing Infrastructure	2	E	8	5	125	36	89	70	30	100.00							

Special Regulations:

Note 1: Learners may specialise in one of 4 areas in their final year: Gaming and Multimedia , Mobile Application Development, Cloud Computing, Data Analytics and Software Development.
 Note 2: The Gaming and Multimedia specialisation consists of the modules Computer Graphics, Design and Animation, Multimedia and Mobile Application development, Usability, Applied Artificial Intelligence, and Cloud Gaming.
 Note 3: The Mobile Application Development specialisation consists of the modules Distributed Systems, Advanced Mobile Application Development, Usability, and Multimedia and Mobile Application Development.
 Note 4: The Software Development specialisation consists of the modules Distributed Systems, Cloud Application Development, Usability, Multimedia and Mobile Application Development, and Data Application Development.
 Note 5: The Cloud Computing specialisation consists of the modules Distributed Systems, Cloud Application Development, Data Application Development, Computing Infrastructure, and Cloud Computing.
 Note 6: The Data Analytics specialisation consists of the modules Data and Web Mining, Advanced Business Data Analysis, Data Application Development, and Business Data Analysis.
 Note 7: The Software Project module is a capstone project and accounts for 5 credits in semester 1 and 15 credits in the second semester.

4.3 B.Sc. (Hons) in Technology Management

4.3.1 Programme Schedule for Stage 1

Name of Provider		National College of Ireland		Programme Codes		BSHTM					
Programme Title (i.e. named award)		BSc (Hons) Technology Management									
Award Title (QQI named award)		Bachelor of Science (Honours)									
Stage Exit Award Title											
Modes of Delivery (FT/PT/ACCS/BLENDED/OC etc)		FT, PT Blended, Block, ACCS									
Stage		1		Number of Stages		4					
Award Class		Major		Award NQF Level		8					
Award EQF Level											
Stage NQF Level		6									
Date Effective		14/09/15									
Ref	Module Title	Semester	Module		ECTS Credit Number	Total Student Effort		Allocation of Marks		Total %	
			Status (M/E)	NQF Level		Total Hours	Contact Hours	Independent Learning	Course Work %		End of Module Formal Examination %
1.1	Problem Solving and Programming Concepts	1	M	6	5	125	48	77	100	0	100
1.2	Introduction to Mathematics for Business & Computing	1	M	6	5	125	36	89	50	50	100
1.3	Web Design	1	M	6	10	250	72	178	50	50	100
1.4	The Computing Industry	1	M	6	5	125	36	89	100	0	100
1.5	Managing Your Learning	1	M	6	5	125	36	89	100	0	100
1.6	Software Applications for Business	2	M	6	5	125	36	89	100	0	100
1.7	Introduction to Management	2	M	6	5	125	36	89	40.00	60.00	100
1.8	Introduction to Marketing	2	M	6	5	125	36	89	50	50	100
1.9	Introduction to Programming	2	M	6	5	125	48	89	50	50	100
1.10	Digital Multimedia	2	M	6	10	250	72	178	100	0	100
Special Regulations: None											

4.3.2 Programme Schedule for Stage 2

Name of Provider		National College of Ireland		Programme Codes		BSHTM						
Programme Title (i.e. named award)		BSc (Hons) Technology Management										
Award Title (QQI named award)		Bachelor of Science (Honours)										
Stage Exit Award Title		FT, PT Blended, Block, ACCS										
Modes of Delivery (FT/PT/ACCS/BLENDED/OC etc)		2		Number of Stages		4						
Award Class		Award NQF Level		8		60						
Award EQF Level		6		Stage EQF Level		ISCED Subject Code						
Date Effective		14/09/15		14/09/15		ISCED Subject Code						
Ref	Module Title	Semester	Module Status (M/E)	NQF Level	ECTS Credit Number	Total Hours	Contact Hours	Total Student Effort	Independent Learning	Course Work %	End of Module Formal Examination %	Total %
2.1	Introduction to Databases	1	M	6	5	125	36	89	89	50	50	100
2.2	Fundamentals of Business Analysis	1	M	6	5	125	36	89	89	50	50	100
2.3	IT Project Management	1	M	6	5	125	3	89	89	40	60	100
2.4	Web Application Development	1	M	6	10	250	72	178	178	100	0	100
2.5	Organisational Behaviour	1	M	6	5	125	36	89	89	30	70	100
2.6	Introduction to Human Resource Management	2	M	6	5	125	36	89	89	30	70	100
2.7	Data Communications and Networking	2	M	6	5	125	36	89	89	40	60	100
2.8	Interdisciplinary Team Project	2	M	6	10	250	96	154	154	100	0	100
2.9	Business Entrepreneurship	2	M	6	5	125	36	89	89	30	70	100
2.10	Principles of Accounting	2	M	6	5	125	36	89	89	40	60	100
Special Regulations:												
None												

4.3.3 Programme Schedule for Stage 3

Name of Provider		National College of Ireland		Programme Codes		BSHTM				
Programme Title (i.e. named award)		BSc (Hons) Technology Management								
Award Title (QQI named award)		Bachelor of Science (Honours)								
Stage Exit Award Title		FT, PT Blended, Block, ACCS								
Modes of Delivery (FT/PT/ACCS/BLENDED/OC etc)		3		Number of Stages		4				
Award Class		Award NQF Level		8		60				
Award EQF Level		7		Stage EQF Level						
Date Effective		14/09/15		ISCED Subject Code						
Ref	Module Title	Semester	Module Status (M/E)	NQF Level	ECTS Credit Number	Total Student Effort	Allocation of Marks	Total %		
						Total Hours	Course Work %	End of Module Formal Examination %		
						Contact Hours	Independent Learning			
3.1	Advanced Databases	1	M	7	5	125	36	89	50	100
3.2	Team Project	1	M	7	10	250	96	154	100	100
3.3	Accounting for Business	1	M	7	10	250	96	154	30	100
3.4	Business Intelligence and Data Warehousing I	1	E	7	5	125	36	89	40	100
3.5	Introduction to ERP	1	E	7	5	125	36	89	50	100
3.6	Work Placement	2	M	7	30	750		750	100	100
3.7	Business Application Development	2	GE1	7	10	250	72	178	100	100
3.8	Application Life Cycle	2	GE1	7	10	250	48	202	100	100
3.9	Business Communication Skills	2	GE1	7	10	250	72	178	100	100

Special Regulations:
 Note 1: GE1 represent modules of the academic internship. These modules are intrinsically interlinked and together their learning outcomes correlate to those of the work placement.
 Note 2: Students must pass all three modules of the academic internship. If one or more modules are not passed then all modules of the academic internship must be repeated in the next academic year in line with the repeat assessment strategy for the work placement.
 Note 3: Business Intelligence & Data Warehousing I is mandatory for Business Information Systems and Social Media streams.

4.3.4 Programme Schedule for Stage 4

Name of Provider		National College of Ireland		Programme Codes		BSHTM					
Programme Title (i.e. named award)		BSc (Hons) Technology Management									
Award Title (QQI named award)		Bachelor of Science (Honours)									
Stage Exit Award Title		FT, PT Blended, Block, ACCS									
Modes of Delivery (FT/PT/ACCS/BLENDED/OC etc)		FT, PT Blended, Block, ACCS									
Stage	4		Number of Stages		4						
Award Class	Award NQF Level		8								
Award EQF Level	Stage EQF Level		60								
Stage NQF Level	8		Stage EQF Level								
Date Effective	14/09/15										
Ref	Module Title	Semester	Module Status (M/E)	NQF Level	ECTS Credit Number	Total Student Effort		Allocation of Marks			Total %
						Contact Hours	Independent Learning	Course Work %	End of Module Formal Examination %		
4.1	Project	1 & 2	M	8	20	500	132	368	100	0	100
4.2	Global Supply Chain Management	1	M	8	5	125	36	89	50	50	100
4.3	Requirements Management	1	GE4	8	5	125	36	89	50	50	100
4.4	Business Data Analysis	1	M	8	5	125	36	89	50	50	100
4.5	Programming for Big Data	1	GE1	8	5	125	36	89	100	0	100
4.6	Strategic Management	1	M	8	5	125	36	89	30	70	100
4.7	Information Systems Management	1	M	8	5	125	36	89	30	70	100.00
4.8	Business Intelligence and Data Warehousing II	1	GE2	8	5	125	36	89	60	40	100
4.9	Advanced Web Application Development	1	GE3	8	5	250	48	202	100	0	100

4.10	Agile Project Management	2	GE4	8	5	125	36	89	30	70	100
4.11	Data and Web Mining	2	GE1	8	10	250	48	202	50	50	100.00
4.12	Advanced Business Data Analysis	2	GE1	8	5	125	36	89	40	60	100.00
4.13	Business Intelligence and Analytics with Social Media	2	GE3	8	10	250	48	202	40	60	100.00
4.14	Business Process Management	2	GE2, GE4	8	10	250	48	202	30	70	100.00
4.15	Business and Network Security	2	GE2	8	5	125	36	89	30	70	100
4.16	Public Relations and Social Media	2	GE3	8	5	125	36	89	100	0	100.00
Special Regulations: Note 1: GE1 represents the Data Analytics Stream Note 2: GE2 represents Business Information Systems Stream Note 3: GE3 represents the Social Media Stream. Note 4: GE4 represents the Business Analysis Stream											

4.4 Higher Certificate in Science in Computing in Applications & Support

4.4.1 Programme Schedule for Stage 1

Name of Provider		Programme Codes		HCC								
Programme Title (i.e. named award)		Higher Certificate in Computing (Application and Business Support)										
Award Title (HETAC named award)		Higher Certificate in Science										
Stage Exit Award Title		Full Time/Part Time/Blended/Block/OCS										
Modes of Delivery (FT/PT/ACCS/BLENDED/OC etc)		Full Time/Part Time/Blended/Block/OCS										
Stage	1	Number of Stages		2								
Award Class	HCC	Award NQF Level		6								
Award EQF Level	6	Stage Credits (ECTS)		60								
Stage NQF Level	6	Stage EQF Level		6								
Date Effective	14/09/15											
Ref	Module Title	Semester	Module		ECTS Credit Number	Total Student Effort per Semester			Allocation of Marks			Total %
			Status (M/E)	NQF Level		Total Hours	Contact Hours	Independent Learning	Course Work %	End of Module Formal Examination %		
1.1	Problem Solving and Programming Concepts	1	M	6	5	125	48	77	100	0	100	
1.2	Introduction to Mathematics for Business & Computing	1	M	6	5	12	36	89	50	50	100	
1.3	Web Design	1	M	6	10	250	72	178	50	50	100	
1.4	The Computing Industry	1	M	6	5	125	36	89	100	0	100	
1.5	Managing Your Learning	1	M	6	5	125	36	89	100	0	100	
1.6	Software Applications for Business	2	M	6	5	125	36	89	100	0	100	
1.7	Introduction to	2	M	6	5	125	48	77	50	50	100	

Name of Provider		Programme Codes				HCC					
Programme Title (i.e. named award)		Higher Certificate in Computing (Application and Business Support)									
Award Title (HETAC named award)		Higher Certificate in Science									
Stage Exit Award Title		Full Time/Part Time/Blended/Block/OCS									
Modes of Delivery (FT/PT/ACCS/BLENDED/OC etc)		1		2							
Stage		Number of Stages		Award NQF Level		6					
Award Class		HCC		Stage Credits (ECTS)		60					
Award EQF Level		6		Stage EQF Level		6					
Stage NQF Level		6		SCED Subject Code							
Date Effective		14/09/15									
Ref	Module Title	Semester	Module		ECTS Credit Number	Total Student Effort per Semester		Allocation of Marks	End of Module Formal Examination %	Total %	
			Status (M/E)	NQF Level		Total Hours	Contact Hours				Independent Learning
1.8	Programming	2	M	6	10	250	72	178	100	0	100
1.9	Digital Multimedia Computer Architecture	2	M	6	5	125	36	89	50	50	100
1.10	Operating Systems	2	E	6	5	125	36	89	50	50	100
1.11	Introduction to Marketing	2	E	6	5	125	36	89	50	50	100

4.4.2 Programme Schedule for Stage 2

Name of Provider		Programme Codes		HCC						
Programme Title (i.e. named award)		Higher Certificate in Computing (Application and Business Support)								
Award Title (HETAC named award)		Higher Certificate in Science								
Stage Exit Award Title		Full Time/Part Time/Blended/Block/OCS								
Modes of Delivery (FT/PT/ACCS/BLENDED/OC etc)		2								
Stage		Number of Stages		2						
Award Class		Award NQF Level		6						
Award EQF Level		Stage Credits (ECTS)								
Stage NQF Level		Stage EQF Level								
Date Effective		14/09/15								
Ref	Module Title	Semester	Module	ECTS Credit Number	Total Student Effort Per Semester		Allocation of Marks			Total %
					Status (M/E)	NQF Level	Total Hours	Contact Hours	Independent Learning	
2.1	Introduction to Databases	1	M	5	125	36	89	50	50	100
2.2	Fundamentals of Business Analysis	1	M	5	125	36	89	50	50	100
2.3	Object Oriented Programming	1	M	5	125	48	77	100	0	100
2.4	IT Project Management	1	M	5	125	36	89	40	60	100
2.5	Web Application Development	1	M	10	226	48	178	100	0	100
2.6	Data Communications and Networking	2	M	5	125	36	89	40	60	100
2.7	Interdisciplinary and Networking Team Project	2	M	10	274	96	178	100	0	100
2.8	Business Entrepreneurship	2	M	5	125	36	89	30	70	100
2.9	Software Engineering	2	M	5	125	36	89	100	0	100
2.10	Data Structures	2	E	5	125	48	77	50	50	100
2.11	Management	2	E	5	125	36	89	50	50	100

Name of Provider		Programme Codes		HCC					
Programme Title (i.e. named award)		Higher Certificate in Computing (Application and Business Support)							
Award Title (HETAC named award)		Higher Certificate in Science							
Stage Exit Award Title		Full Time/Part Time/Blended/Block/OCS							
Modes of Delivery (FT/PT/ACCS/BLENDED/OC etc)		Full Time/Part Time/Blended/Block/OCS							
Stage		2		Number of Stages					
Award Class		HCC		Award NQF Level					
Award EQF Level		6		Stage Credits (ECTS)					
Stage NQF Level		6		Stage EQF Level					
Date Effective		14/09/15		ISCED Subject Code					
Ref	Module Title	Semester	Module	ECTS Credit Number		Total Student Effort Per Semester		Allocation of Marks	
				Status (M/E)	NQF Level	Total Hours	Contact Hours	Independent Learning	Course Work %
Information Systems									
Special Regulations: Students may select either elective Data Structures or Management Information Systems.									

4.5 Certificate in Web Technologies

4.5.1 Programme Schedule

Name of Provider		National College of Ireland		Programme Codes		CWEBTECH				
Programme Title (i.e. named award)		Certificate in Web Technologies								
Award Title (HETAC named award)		Certificate								
Stage Exit Award Title		Award								
Modes of Delivery (FT/PT/ACCS/BLENDED/OC etc.)		FT/PT/ACCS/BLENDED/OC								
Stage			Number of Stages		1					
Award Class			Award NQF Level		8					
Award EQF Level			Stage Credits (ECTS)		30					
Stage NQF Level			Stage EQF Level		7					
Date Effective		14/09/15								
Ref	Module Title	Semester	Module Status (M/E)	ECTS Credit Number	Total Student Effort		Allocation of Marks	Total %		
					NQF Level	Contact Hours			Independent Learning	Course Work %
1.1	Server Side Web Technologies	1	M	10	250	48	202	70	30	100.00
1.2	Introduction to Databases	1	M	5	125	48	77	50	50	100.00
1.3	Web Design	1	M	5	125	36	89	100	0	100.00
1.4	Digital Multimedia	2	M	10	250	48	202	70	30	100.00
Special Regulations:		None								

4.6 Certificate in Web Development

4.6.1 Programme Schedule

Name of Provider		National College of Ireland		Programme Codes		BSHC					
Programme Title (i.e. named award)		BSc (Honours) in Computing									
Award Title (HETAC named award)		Bachelor of Science (Hons)									
Stage Exit Award Title		FT/PT/ACCS/BLENDED									
Modes of Delivery (FT/PT/ACCS/BLENDED/OC etc.)		FT/PT/ACCS/BLENDED									
Stage		1		Number of Stages		1					
Award Class		5		Award NOF Level		6					
Award EQF Level		6		Stage Credits (ECTS)		30					
Stage NOF Level		14/09/15		Stage EQF Level							
Date Effective		14/09/15									
Ref	Module Title	Semester	Module Status (M/E)	ECTS Credit Number		Allocation of Marks		Total %			
				NOF Level	ECTS Credit Number	Total Student Effort	Course Work %		End of Module Formal Examination %		
1.1	The Computing Industry	1	M	6	5	125	36	89	100	0	100.00
1.1	Web Design	1	M	6	10	250	72	178	50	50	100.00
1.3	Digital Multimedia	2	M	6	10	250	72	178	100	0	100.00
1.4	Project	2	M	6	5	125			100	0	100.00
Special Regulations:											
None											

4.7 Certificate in Web Design

4.7.1 Programme Schedule

Name of Provider		National College of Ireland		Programme Codes		BSHC					
Programme Title (i.e. named award)		Certificate in Web Design									
Award Title (HETAC named award)											
Stage Exit Award Title											
Modes of Delivery (FT/PT/ACCS/BLENDED/OC etc.)		FT/PT/ACCS/BLENDED									
Stage			Number of Stages								
	1		1								
Award Class			Award NOF Level		6						
	5		Stage Credits (ECTS)		30						
Stage NOF Level	6		Stage EQF Level								
Date Effective	14/09/15										
Ref	Module Title	Semester	Module Status (M/E)	NQF Level	ECTS Credit Number	Total Student Effort		Allocation of Marks		Total %	
						Contact Hours	Independent Learning	Course Work %	End of Module Examination %		
1.1	The Computing Industry	1	M	6	5	125	36	89	100	0	100.00
1.1	Web Design	1	M	6	10	250	72	178	50	50	100.00
1.3	Digital Multimedia	1	M	6	10	250	72	178	100	0	100.00
1.4	Project	1	M	6	5	125	36	89	100	0	100.00
Special Regulations:											
None											

4.8 Higher Diploma in Science in Web Technologies

4.8.1 Programme Schedule

Name of Provider		National College of Ireland		Programme Codes		HDSWTECH						
Programme Title (i.e. named award)		Higher Diploma in Science in Web Technologies										
Award Title (QQI named award)		Higher Diploma in Science										
Stage Exit Award Title		FT/PT/ACCS/BLENDED/OC										
Modes of Delivery (FT/PT/ACCS/BLENDED/OC etc)		FT/PT/ACCS/BLENDED/OC										
Stage		1	Number of Stages		1							
Award Class		Major	Award NQF Level		8							
Award EQF Level		8	Stage Credits (ECTS)		60							
Stage NQF Level		8	Stage EQF Level									
Date Effective		14/09/15	ISCED Subject Code									
Ref	Module Title	Semester	Module Status (M/E)	NQF Level	ECTS Credit Number	Total Hours	Contact Hours	Total Student Effort	Independent Learning	Course Work %	End of Module Formal Examination %	Total %
1.1	Object Oriented Software Engineering	1	M	8	5	125	36	89	89	60	40	100.00
1.2	Server Side Web Technologies	1	M	8	10	250	48	202	202	70	30	100.00
1.3	Computer Architecture Operating Systems and Network	1	M	8	5	125	36	89	89	50	50	100.00
1.4	Introduction to Databases	1	M	8	5	125	36	77	77	50	50	100.00
1.5	Web Design	1	M	8	5	125	36	89	89	100	0	100.00
1.6	Digital Multimedia	2	M	8	10	250	48	202	202	70	30	100.00
1.7	Project	2	M	8	10	250	48	202	202	100	0	100.00
1.8	Web Application Development	2	M	8	10	250	48	202	202	100	0	100.00

Special Regulations:

None

4.9 M.Sc. in Mobile Technologies

4.9.1 Programme Schedule

Name of Provider	National College of Ireland												
Programme Title (i.e. named award)	MSc in Mobile Technologies												
Award Title (QQI named award)	MSc in Mobile Technologies												
Stage Exit Award Title	Postgraduate Diploma in Science in Mobile Technologies												
Modes of Delivery (FT/PT/ACCS/BLENDED/OC etc.)	FT, PT, Blended, Block, ACCS												
Award Class	Award NQF Level	Award EQF Level	Stage	Stage NQF Level		Stage EQF Level	Stage Credit (ECTS)	Date Effective	ISCED Subject Code	Allocation of Marks			
				Module Status (M/E)	NQF Level					Total Hours	Contact Hours	Independent Learning	CA %
Major	9		Award	9			90	September 2014		481			
Ref	Module Title		Semester	Module Status (M/E)	NQF Level	ECTS Credit Number	Total Hours	Contact Hours	Independent Learning	CA %	Project %	Exam %	Total %
	Mobile Architecture and Security		1	M	9	10	250	48	202	0	50	50	100
	Mobile Platforms and Application Design		1	M	9	10	250	48	202	50	0	50	100
	Usability		1	M	9	5	125	24	101	0	50	50	100
	Technologies for Internet of Things		1	E (g1)	9	5	125	24	101	30	0	70	100
	Advanced Client Side Development		1	E (g2)	9	5	125	36	89	60	40	0	100
	Research in Computing		2	M	9	5	125	24	101	0	100	0	100
	Business Strategies In Computing		2	M	9	10	250	48	202	0	50	50	100
	Software Applications for Internet of Things		2	E (g1)	9	10	250	48	202	60	40	0	100
	Mobile Applications Development		2	E (g2)	9	10	250	48	202	60	40	0	100
	Data Mining and Visualisation		2	E (g1)	9	5	125	24	101	0	50	50	100
	Cloud Application Services		2	E (g2)	9	5	125	24	101	0	50	50	100
	Research Methods		3	M	9	5	125	24	101	60	40	0	100
	Research Project		3	E (g3)	9	25	500	10	490	0	100	0	100
	Industry based Research Project		3	E (g3)	9	25	500	10	490	0	100	0	100

Special Regulations:

Note 1: Elective modules are divided into three groups (g1, g2 and g3). Each student must undertake 45 ECTS credits in elective modules: 20 credits from either g1 or g2, and one 25 credits from g3.

Note 2: A student must pass Research in Computing and not repeat more than 10 ECTS credits to be eligible to register for the Research Project / Industry-based Research Project elective.

Note 3: In semester 3, learners must complete and pass either the Research Project or the Industry Based Research Project

4.10 Postgraduate Diploma in Mobile Technologies

4.10.1 Programme Schedule

Name of Provider	National College of Ireland												
Programme Title (i.e. named award)	PGDip in Mobile Technologies												
Award Title (QQI named award)	PGDip in Mobile Technologies												
Stage Exit Award Title	Postgraduate Diploma in Science in Mobile Technologies												
Modes of Delivery (FT/PT/ACCS/BLENDED/OC etc.)	FT, PT, Blended, Block, ACCS												
Award Class	Award NQF Level	Award EQF Level	Stage	Stage NQF Level		Stage EQF Level	Stage Credit (ECTS)	Date Effective	ISCED Subject Code	Allocation of Marks			
				Module Status (M/E)	NQF Level					CA %	Project %	Exam %	Total %
Major	9		Award Semester	9			60	September 2015	481				
Ref	Module Title					ECTS Credit Number	Total Hours	Contact Hours	Independent Learning	CA %	Project %	Exam %	Total %
	Mobile Architecture and Security		1	M	9	10	250	48	202	0	50	50	100
	Mobile Platforms and Application Design		1	M	9	10	250	48	202	50	0	50	100
	Usability		1	M	9	5	125	24	101	0	50	50	100
	Technologies for Internet of Things		1	E (g1)	9	5	125	24	101	30	0	70	100
	Advanced Client Side Development		1	E (g2)	9	5	125	36	89	60	40	0	100
	Research in Computing		2	M	9	5	125	24	101	0	100	0	100
	Business Strategies In Computing		2	M	9	10	250	48	202	0	50	50	100
	Software Applications for Internet of Things		2	E (g1)	9	10	250	48	202	60	40	0	100
	Mobile Applications Development		2	E (g2)	9	10	250	48	202	60	40	0	100
	Data Mining and Visualisation		2	E (g1)	9	5	125	24	101	0	50	50	100
	Cloud Application Services		2	E (g2)	9	5	125	24	101	0	50	50	100

Special Regulations:

Note 1: Elective modules are divided into three groups (g1 and g2). Each student must undertake 20 credits in elective modules from either g1 or g2.

4.1.1 Certificate in Application Development for Mobile Devices

4.1.1.1 Programme Schedule

Name of Provider		National College of Ireland											
Programme Title (i.e. named award)		Certificate in Application Development for Mobile Devices											
Award Title (HETAC named award)		Certificate in Application Development for Mobile Devices											
Stage Exit Award Title		FT, PT, Blended, Block, ACCS											
Modes of Delivery (FT/PT/ACCS/BLENDED/OC etc.)													
Award Class	Award NQF Level	Award EQF Level		Stage	Stage NQF Level	Stage EQF Level	Stage Credit (ECTS)	Date Effective	ISCED Subject Code	Allocation of Marks		Total %	
	9									CA %	Project %		Exam %
Minor	9			Award	9		30	September 2015					
R e f	Module Title	Semester	Module Status (M/E)	Module NQF Level	ECTS Credit Number	Total Hours	Total Student Effort		Independent Learning	CA %	Project %	Exam %	Total %
							Total Hours	Contact Hours					
	Mobile Platforms and Application Design	1	M	9	10	250	48	202	0	50	50	100	
	Advanced Client Side Development	1	M	9	5	125	36	89	60	40	0	100	
	Usability	1	M	9	5	125	26	99	0	50	50	100	
	Mobile Applications Development	2	M	9	10	250	48	202	60	40	0	100	
Special Regulations:													

4.1.2 M.Sc. in Web Technologies

4.1.2.1 Programme Schedule

Name of Provider		National College of Ireland			Programme Codes			MSCWEBTECH			
Programme Title (i.e. named award)		MSc in Web Technologies									
Award Title (HETAC named award)		Master of Science									
Stage Exit Award Title		Master of Science									
Modes of Delivery (FT/PT/ACCS/BLENDED/OC etc.)		FT/PT/ACCS/BLENDED/OC									
Stage		1			Number of Stages			1			
Award Class		Major			Award NQF Level			9			
Award EQF Level		7			Stage Credits (ECTS)			90			
Stage NQF Level		9			Stage EQF Level			7			
Date Effective		14/09/15									
Ref	Module Title	Semester	Module		ECTS Credit Number	Total Student Effort		Allocation of Marks			Total %
			Status (M/E)	NQF Level		Total Hours	Contact Hours	Independent Learning	Course Work %	End of Module Formal Examination %	
1.1	Usability	1	M	9	5	125	24	101	50	50	100.00
1.2	Web Application Frameworks	1	M	9	10	250	60	190	50	50	100.00
1.3	Deployment	1	M	9	5	125	36	89	50	50	100.00
1.4	Technologies for Internet of Things	1	M	9	5	125	24	101	30	70	100.00
1.5	Advanced Client Side Scripting	1	M	9	5	125	24	101	60	40	100.00
1.6	Enterprise Frameworks	2	M	9	5	125	48	77	50	50	100.00
1.7	Programming for Data Analytics	2	M	9	10	250	48	202	100	0	100.00
1.8	Business Strategies in Computing	2	M	9	10	250	48	202	50	50	100.00
1.9	Research in Computing	2	M	9	5	125	24	101	100	0	100.00
1.10	Research Project	3	E(G1)	9	25	600	12	588	100	0	100.00
1.11	Industry Based Research Project	3	E(G1)	9	25	600	12	588	100	0	100.00
1.12	Research Methods	3	M	9	5	125	24	101	100	0	100.00
Special Regulations:											

Name of Provider		National College of Ireland			Programme Codes		MSCWEBTECH		
Programme Title (i.e. named award)		MSc in Web Technologies							
Award Title (HETAC named award)		Master of Science							
Stage Exit Award Title		Master of Science							
Modes of Delivery (FT/PT/ACCS/BLENDED/OC etc.)		FT/PT/ACCS/BLENDED/OC							
Stage		1		Number of Stages		1			
Award Class		Major		Award NQF Level		9			
Award EQF Level		7		Stage Credits (ECTS)		90			
Stage NQF Level		9		Stage EQF Level		7			
Date Effective		14/09/15							
Ref	Module Title	Semester	Module Status (M/E)	ECTS Credit Number		Total Student Effort		Allocation of Marks	
				NQF Level	ECTS Number	Total Hours	Contact Hours	Independent Learning	Course Work %

Note 1: In semester 3, learners must complete and pass either the Research Project or the Industry Based Research Project
 Note 2: A student must pass Research in Computing and not repeat more than 10 ECTS credits to be eligible to register for the Research Project / Industry-based Research Project elective.

4.1.3 Postgraduate Diploma in Science in Web Technologies

4.1.3.1 Programme Schedule

Name of Provider		National College of Ireland		Programme Codes		PGDWEBTECH					
Programme Title (i.e. named award)		Postgraduate Diploma in Science in Web Technologies									
Award Title (HETAC named award)		Postgraduate Diploma									
Stage Exit Award Title		Postgraduate Diploma									
Modes of Delivery (FT/PT/ACCS/BLENDED/OC etc.)		FT/PT/ACCS/BLENDED/OC									
Stage		Number of Stages		1							
Award Class		Major		Award NQF Level		9					
Award EQF Level		7		Stage Credits (ECTS)		60					
Stage NQF Level		9		Stage EQF Level		7					
Date Effective		14/09/15									
Ref	Module Title	Semester	Module Status (M/E)	ECTS Credit Number	NQF Level	Total Student Effort		Allocation of Marks		Total %	
						Contact Hours	Total Hours	Independent Learning	Course Work %		End of Module Examination %
1.1	Usability	1	M	5	9	24	125	101	50	50	100.00
1.2	Web Application Frameworks	1	M	10	9	60	250	190	50	50	100.00
1.3	Deployment	1	M	5	9	36	125	89	50	50	100.00
1.4	Technologies for Internet of Things	1	M	5	9	24	125	101	30	70	100.00
1.5	Advanced Client Side Scripting	1	M	5	9	24	125	101	60	40	100.00
1.6	Enterprise Frameworks	2	M	5	9	48	125	77	50	50	100.00
1.7	Programming for Data Analytics	2	M	10	9	48	250	202	100	0	100.00
1.8	Business Strategies in Computing	2	M	10	9	48	250	202	50	50	100.00
1.9	Research in Computing	2	M	5	9	24	125	101	100	0	100.00

Name of Provider	National College of Ireland			PGDWEBTECH		
Programme Title (i.e. named award)	Postgraduate Diploma in Science in Web Technologies					
Award Title (HETAC named award)	Postgraduate Diploma					
Stage Exit Award Title	Postgraduate Diploma					
Modes of Delivery (FT/PT/ACCS/BLENDED/OC etc.)	FT/PT/ACCS/BLENDED/OC					
Stage	1	Number of Stages		1		
Award Class	Major	Award NQF Level		9		
Award EQF Level	7	Stage Credits (ECTS)		60		
Stage NQF Level	9	Stage EQF Level		7		
Date Effective	14/09/15					
Ref	Module Title	Semester	Module Status (M/E)	ECTS Credit Number	Total Student Effort	Allocation of Marks
			NQF Level		Total Hours	Independent Learning
					Contact Hours	Course Work %
					Hours	End of Module Formal Examination %
					Hours	Total %

Special Regulations:
None

4.1.4 M.Sc. in Cloud Computing

4.1.4.1 Programme Schedule

Name of Provider	National College of Ireland											
Programme Title (i.e. named award)	Master of Science in Cloud Computing											
Award Title (HETAC named award)	Master of Science in Cloud Computing											
Stage Exit Award Title	Post Graduate Diploma in Cloud Computing											
Modes of Delivery (FT/PT/ACCS/BLENDED/OC etc.)	Full Time, Part Time, and Blended, ACCS											
Award Class	Award NQF Level	Award EQF Level	Stage	Stage NQF Level	Stage EQF Level	Stage Credit Level	Stage Credit (ECTS)	Date Effective	ISCED Subject Code			
MSC	9	7	AWARD	9	7	90	432					
Ref	Module Title	Semester	Status (M/E)	ECTS		Total Learner Effort		Allocation of Marks		Final %	Total %	
				Module NQF Level	Module Credit Number	Total Hours	Contact Hours	Independent Learning	CA %			Project %
	Cloud Architecture	1	M	9	5	125	24	101	N/A	N/A	100	100
	Cloud Infrastructure Management	1	E (g1)	9	10	250	48	202	35	N/A	30	100
	Cloud Security	1	M	9	10	250	48	202	N/A	40	60	100
	Cloud Application Development	1	E (g2)	9	10	250	48	202	N/A	100	N/A	100

Utility Computing	1	M	9	5	125	24	101	N/A	50	N/A	50	100
Virtualisation	2	E (g1)	9	5	125	24	101	35	35	N/A	30	100
Data Storage and Management	2	E (g1)	9	10	250	48	202	N/A	50	50	N/A	100
Research in Computing	2	M	9	5	125	24	101	N/A	100	N/A	N/A	100
Business Strategies for Cloud Computing	2	M	9	10	250	48	202	N/A	100	N/A	N/A	100
Cloud Application Services	2	E (g2)	9	5	125	24	101	N/A	50	N/A	50	100
Programming for Data Analytics	2	E (g2)	9	10	250	48	202	20	60	20	N/A	100
Research Methods	3	M	9	5	125	24	101	60	40	N/A	N/A	100
Industry-based Research Project	3	E (g3)	9	25	500	10	490	N/A	100	N/A	N/A	100
Research Project	3	E (g3)	9	25	500	10	490	N/A	100	N/A	N/A	100

Special Regulations: *i)* Elective modules are divided into three groups (g1, g2, and g3). Each student must undertake 50 ECTS credits in elective modules: 25 from either g1 or g2, and 25 from g3. Modules from g1 and g2 cannot be mixed. *ii)* To be registered in the elective research project module from g3, a student must pass Research in Computing, and be resitting at most one module (5 or 10-credit ECTS). *iii)* The Research Project modules (g3) cannot be compensated and can only be repeated once.

4.15 Postgraduate Diploma in Science in Cloud Computing

4.15.1 Programme Schedule

Name of Provider		National College of Ireland									
Programme Title (i.e. named award)		Postgraduate Diploma in Cloud Computing									
Award Title (HETAC named award)		Postgraduate Diploma in Cloud Computing									
Stage Exit Award Title											
Modes of Delivery (FT/PT/ACCS/BLENDED/OC etc.)		Full Time, Part Time, and Blended, ACCS									
Award Class	Award NQF Level	Award EQF Level	Stage	Stage NQF Level	ECTS Credit Number	Stage EQF Level	Stage Credit (ECTS)	Date Effective	ISCED Subject Code		
Major	9	7	AWARD	9	7	60	432				
Ref	Module Title			Module		Total Learner Effort		Allocation of Marks			
	SEM	Status (M/E)	NQF Level	ECTS Credit Number	Total Hours	Contact Hours	Independent Learning	CA %	Project %	Practical %	Total %
	1	M	9	5	125	24	101	N/A	N/A	N/A	100
	1	E (g1)	9	10	250	48	202	35	35	N/A	30
	1	M	9	10	250	48	202	N/A	40	N/A	60
	1	E (g2)	9	10	250	48	202	N/A	100	N/A	100
	1	M	9	5	125	24	101	N/A	50	N/A	50
	2	E (g1)	9	5	125	24	101	35	35	N/A	30
	2	E (g1)	9	10	250	48	202	N/A	50	50	100
	2	M	9	5	125	24	101	N/A	100	N/A	100
	2	M	9	10	250	48	202	N/A	100	N/A	100
	2	E (g2)	9	5	125	24	101	N/A	50	N/A	50
	2	E (g2)	9	10	250	48	202	20	60	20	100

Special Regulations: i Elective modules are divided into two groups (g1 and g2). Each student must undertake 25 ECTS credits in elective modules from either g1 or g2. Elective modules (g1 and g2) cannot be mixed.

4.16 Certificate in Cloud Computing for Business

4.16.1 Programme Schedule

Name of Provider		National College of Ireland											
Programme Title (i.e. named award)		Certificate in Cloud Computing for Business											
Award Title (HETAC named award)		Certificate in Cloud Computing for Business											
Stage Exit Award Title		Certificate											
Modes of Delivery (FT/PT/ACCS/BLENDED/OC etc.)		Full Time, Part Time, and Blended, ACCS											
Award Class	Award NQF Level	Award EQF Level	Stage	Stage NQF Level	Stage EQF Level	Stage Credit (ECTS)	Date Effective	ISCED Subject Code					
Minor	9	7	AWARD	9	7	30	September 2015	432					
Ref	Module Title	Sem	Module Status (M/E)	ECTS Credit Number		Total Learner Effort		Allocation of Marks					
				NQF Level	ECTS Credit Number	Total Hours	Contact Hours	Independent Learning	CA %	Project %	Practical %	Final %	Total %
	Cloud Architecture	1	M	9	5	125	24	101	N/A	N/A	N/A	100	100
	Cloud Security	1	M	9	10	250	48	202	N/A	40	N/A	60	100
	Utility Computing	1	M	9	5	125	24	101	N/A	50	N/A	50	100
	Business Strategies for Cloud Computing	1	M	9	10	250	48	202	N/A	100	N/A	N/A	100

