

Institute of Technology Blanchardstown**Programmatic review of the
School of Informatics and Engineering****Peer-review group report**

Final: 2 June 2006

1.	Executive summary	2
2.	Preamble	2
3.	Courses under consideration.....	3
4.	Membership of the peer-review panel	3
5.	Institutional staff and students consulted	4
6.	Timetable of programmatic review	5
7.	Documentation supplied	5
8.	Panel session 1: Pre-meeting	6
9.	Panel session 2: Context	6
10.	Panel session 3: Strategic objectives of the School.....	7
11.	Panel session 4a: Details of computing and horticulture courses.....	9
12.	Panel session 4b: Details of engineering courses	10
13.	Panel session 5: Meeting with students	11
14.	Panel session 6: Tour of facilities.....	12
15.	Panel findings and recommendations:	13
16.	Follow-up actions	16
17.	Appendix: Relevant Institute policies	17

1. Executive summary

- 1.1. The School of Informatics and Engineering, Institute of Technology Blanchardstown undertook a review of its programmes and activities during the academic year 2005-2006. Staff of the School produced a self-evaluation report. An external peer-review panel was established by the Registrar. This panel met on 26th April 2006 to consider the self-evaluation report and to meet with staff of the School. This report identifies the findings of this peer-review panel.
- 1.2. The overall recommendation of the panel was that all recommendations made in the self-evaluation report be accepted. Some specific recommendations have been made in this report to qualify the scope of this overall recommendation.
- 1.3. The Panel were impressed by the depth of self analysis that was undertaken by the School and would like to commend the management and staff of the School for the quality of the documentation and the level of engagement during the visit.

2. Preamble

- 2.1. The School of Informatics and Engineering, Institute of Technology Blanchardstown undertook a review of its programmes and activities during the academic year 2005-2006. The process followed was that described in Institute policy 2MP15 "Monitoring and evaluation of academic programmes" (see appendix). Staff of the School produced a self-evaluation report of activities as described in 2MP15.
- 2.2. An external peer-review panel was established by the Registrar following the procedures outlined in 2MP15. This panel met on 26th April 2006 to consider the self-evaluation report and to meet with staff of the School.
- 2.3. The peer-review group produced a report of their findings (this report) and this will be reported to the Academic Council of the Institute and HETAC as per agreed quality assurance policy 2MP15.

3. Courses under consideration

3.1. The following courses were considered for re-validation:

Code	Title	NFQ level
BN001	Higher certificate in engineering in electronics and computer engineering	6
BN002	Higher certificate in science in computing in information technology	6
BN007	Bachelor of science in horticulture	7
BN008	Bachelor of science in horticulture	7
BN009	Bachelor of engineering in mechatronics	7
BN301	Bachelor of engineering in computer engineering	7
BN302	Bachelor of science in computing in information technology	7
BN401	Bachelor of engineering (honours) in computer engineering	8
BN402	Bachelor of science (honours) in computing	8
BN407	Bachelor of engineering (honours) in mechatronics	8
BN509	Higher diploma in science in computing	8
BN512	Master of science in computing	9
BN903	Higher certificate in engineering in mechatronics	6
BN904	Higher certificate in science in computing in systems support	6

4. Membership of the peer-review panel

4.1. The following were members of the peer-review panel:

Dr. Brendan McCormack,	Head of School, Institute of Technology Sligo (Chair)
Dr. Richard Studdert,	Computer Science Department, University College Cork
Ms. Orla Flynn,	Cork Institute of Technology
Mr. Austin Hanley,	Athlone Institute of Technology
Mr. Tom O'Brien,	Creative Labs, Ballycoolin Business Park, Blanchardstown Road North, Dublin 15
Mr. Pat O'Connor,	Head of ICT Skills, Higher Education Authority,
Dr. Mary Forrest	University College Dublin, Belfield, Dublin 4
Dr. Marian O'Sullivan,	Registrar, Institute of Art, Design & Technology, Kill Avenue, Dun Laoghaire
Mr. Joe Cox,	Specialist, Higher Education & Training Awards Council, 26-27 Denzille Lane, Dublin 2
Mr Barry Coffey	President of ITB Students' Union, Institute of Technology Blanchardstown Road North, Dublin 15
Dr Diarmuid O'Callaghan	Registrar Institute of Technology Blanchardstown, Blanchardstown Road North, Dublin 15 (Secretary)

5. Institutional staff and students consulted

5.1. The following management staff represented the Institute:

Dr. Diarmuid O'Callaghan	Registrar
Mr Larry McNutt	Head of School of Informatics and Engineering
Dr Brian Nolan	Head of Department of Computing
Mr Damian Cox	Head of Department of Engineering

5.2. The following academic staff represented the Institute:

Dr. Matt Smith	Mr. Cormac McMahon	Dr. Anthony Keane
Mr. Declan Barber	Mr. Tom Nolan	Mr. Kevin Martin
Mr. Conn Cremin	Ms. Laura Keyes	Mr. Hugh McCabe
Mr. Mark Cummins	Ms. Orla McMahon	Ms. Frances Murphy
Dr. Kevin Farrell	Mr. Daniel McSweeney	Mr. Stephen Sheridan
Ms. Geraldine Gray	Mr. Luke Raeside	Ms. Margaret Kinsella
Mr. Michael O'Donnell	Mr Simon Mc Laughlin	
Dr. Philip Owende	Mr. Niall Bell	Mr. Niall Campbell
Mr. Richard Gallery	Mr. Gareth Curran	Dr. Catherine Deegan
Dr. James Duffy	Dr. Arnulf Horn	Dr. Darren Lavelle
Ms. Michelle Looby	Mr. Raymond Manley	Mr. John Massey
Mr. Fergus Maughan	Mr. Ben Toland	Dr. Kevin Mellon
Dr. Morris Rimbi	Dr. Mohamad Saleh	Mr. Ivan Smyth

5.3. The following academic staff represented partner colleges:

Mr. Harold Lawlor	Ms. Eileen Woodbyrne	Dr. Paul Cusack
Mr. Colm Dockrell	Mr. Pat Suttle	Mr. Pat Leonard

5.4. The following students were consulted:

Mr. Daniel Hollingsworth (BN401)	Mr. Kieran O'Connor (BN401)	Mr. Martin Mitchell (BN002)
Ms. Ann Duignan (BN009)	Mr. Vincent McGrane (BN009)	Ms. Gillian Folan (BN009)
Mr. Pedro Mavinga (BN001)	Mr. Shane McLaughlin (BN007)	Mr. Patrick Monaghan (BN402)
Mr. Robert O'Reilly (BN512)	Mr. Alan Fay (BN009)	Mr. Raymond Dredge (BN009)
Mr. Yasser Salem (BN302)	Mr. James Kennedy (BN302)	Ms. Noreen McCallion (BN008)
Ms. Juliann Adamson (BN301)	Mr. Daniel Boshell (BN301)	Mr. Keith Howell (BN002)
Mr. Marc Duncan (BN001)		

6. Timetable of programmatic review

6.1. The following timetable was followed:

Previous day (25th April) 8pm	Pre-panel meeting Castleknock Golf & Country Club
9.00am-10am	
10am-10.15am	Context: <ul style="list-style-type: none"> • Director, • Registrar • Head of School
10.15am-11.15am	Strategic objectives of School: <ul style="list-style-type: none"> • Head of School • Head of Department of Computing • Head of Department of Engineering • Senior lecturers
11.15am-11.30am	Coffee
11.30am-1pm	Details of Computing and horticulture courses <ul style="list-style-type: none"> • All academic staff (A57)
11.30am-1pm	Details of Engineering courses: <ul style="list-style-type: none"> • All academic staff (Boardroom Block F)
1pm-2pm	Lunch (Restaurant)
2pm-2.30pm	Meeting with students (A57)
2.30pm-3pm	Tour of facilities
3pm-4pm	Private meeting of panel
4pm	Exit meeting <ul style="list-style-type: none"> • Head of School • Head of Department of Computing • Head of Department of Engineering • Senior lecturers

7. Documentation supplied

7.1. The panel considered the following documentation:

- Volume 1 Institute overview;
- Volume 2 School and Department overview;
- Volume 3 part 1 and part 2 Programme overview;
- Supplementary errata list;
- Mapping of programmes against NFQ level indicators and HETAC awards standards;
- Individual programme syllabi;

8. Panel session 1: Pre-meeting

- 8.1. It was noted that the programmatic review process is part of a suite of quality assurance processes agreed with HETAC. This exercise takes place every 5 years and follows the process documented in Institute policy 2MP15 "Monitoring and evaluation of academic programmes". The main process involves self-study with recommendations of amendments to existing approved course schedules with associated justification.
- 8.2. As per agreed procedure, the Registrar acted as secretary to the group.
- 8.3. It was noted that the Academic Council has responsibility for ensuring that recommendations of this panel report are implemented.
- 8.4. It was noted that the purpose of programmatic review is to:
 - Facilitate a reflective self-study within the School which allows critical evaluation of all activities, both current and proposed, with consideration of this self-study by a panel of peers drawn from education and industry;
 - Facilitate a review of all academic courses provided by the School indicating how they have been updated in light of changing environmental conditions and recent knowledge. Consider updated recommendations from course boards;
 - Issue recommendations for re-accrediting programmes for the next 5 years;
- 8.5. The roles and responsibilities of the panel as listed in Institute policy document 2MP17 "Roles and responsibilities of external experts on validation and review panels" were noted (see appendix).

9. Panel session 2: Context

- 9.1. The Registrar welcomed the panel on behalf of the Director. The Registrar noted that the Institute is committed to delivery on the spirit of the agreed quality assurance procedures. Programmatic review is considered an essential component of these quality assurance procedures. The Registrar thanked the panel for their commitment to the Institute by taking the time to consider the documentation and to participate in the review. The Registrar noted that the staff of the Institute consider such engagements extremely constructive and beneficial for the Institute.
- 9.2. The Registrar pointed out that the Institute was established in 1999, and all academic programmes being considered at this programmatic review were originally validated between 1999 and 2005. Thus, this is the first programmatic review conducted in the Institute.
- 9.3. The Head of School of Informatics and Engineering welcomed the panel and briefly described the structure of the programmatic review from within the School and the relationship between the activities of the School and the strategic plan of the Institute.
- 9.4. It was noted that the Institute had recently applied to HETAC for delegation of authority to confer awards up to NFQ level 7 on taught programmes.

10. Panel session 3: Strategic objectives of the School

- 10.1. The Chairman presented the context of the panel review and stated that the objective of the panel was to enhance what had already been done and to consider the objectives and recommendations of staff and to consider what staff want to achieve from the programmatic review exercise.
- 10.2. An overview of the growth of undergraduate programmes was presented. It was noted that there is a strong climate of change with respect to the operating environment of the School of Informatics and Engineering, with respect to student supply and market requirements. The demand for places from students entering the Institute through the CAO is decreasing and the demand from students in industry is rising. A significant challenge is presented to the School in how to increase growth from non CAO students. The development of programmes reflects this challenge and programmatic review addresses the issue of maximizing flexibility in this context.
- 10.3. The process followed for programmatic review was considered. The process was broken into a series of stages as described in the Institute policy 2MP15. Programmes were reviewed by subject teams and changes considered by a steering group. This review considered horizontal and vertical review. A SWOT analysis was completed for each programme
- 10.4. The SWOT analysis was conducted at many levels. A particular challenge was to elevate the analysis to a School level. The School and Department analysis presented in volume 2 was based on the collective SWOT analyses completed at a programme level.
- 10.5. The stakeholder input into the SWOT analysis was a bottom-up approach. This was also reflected in strategic planning activities of each Department. The conclusions as to how Departments met their strategic goals are presented in volume 2 of the submission documents.
- 10.6. The impact of the new management structure on the operation of the school was considered. It was noted that the Departments are in place since January 2005 and that programmatic review mostly related to a period when a Departmental structure did not exist. Department structural review was not a substantial component of this review exercise.
- 10.7. It was stressed that the role of programmatic review was considered to be in the context of review of activities. Strategic plans for the next 5 years will be developed later in the context of the Institute's forthcoming 2006-2010 strategic plan.
- 10.8. Action required to achieve flexibility in programme delivery was considered. An example of students with NFQ level 6 qualifications seeking NFQ level 7 awards in horticulture was cited as an example of flexible delivery.
- 10.9. The issue of learning difficulties was considered, in particular in context with the National Learning Network (BUA) centre. A proactive approach to assessment of learning styles is taken with an output report to students. The lecturer also receives a report about how to address identified issues. A document is forwarded to course coordinator with lists of special learning needs. The importance of training for lecturer staff was identified, with a role for the NLN centre in managing expectations of staff by provision of information and workshops. Training in the area of learning styles is conducted as part of staff induction in September.

- 10.10. The issues of student retention were addressed, with procedures for dealing with students who drop out of a course. Mechanisms to determine why a student leaves were described. If considered relevant, potential solutions relating to course transfer are presented to the student.
- 10.11. The advantages of a modular system were discussed in the context of provision of flexible learning opportunities
- 10.12. The issue of a formalized industrial advisory board was considered. A formal advisory board is not in operation at the moment, although the new admissions and marketing unit is linking more closely with industrial stakeholders.
- 10.13. The use of the QA 1, QA2 and QA3 forms as an effective tool for obtaining feedback was considered.
- 10.14. The recent reduction in numbers entering science and engineering courses was acknowledged as a major threat. Course recruitment initiatives must capture the imagination of students.
- 10.15. The issue of common entry was considered. There is an opinion that students are being asked to select their courses too early in their third level education. Many students don't know what career they wish to follow. It was suggested that first semester be used to explore variations in academic programmes.
- 10.16. Compliance with NFQ framework standards was considered. It was noted that learning outcomes are drafted at a programme level and also at a module level. The programme coordinators asked to review revalidation process in context of programme, rewriting syllabi and relating to standards. This exercise required reform of syllabi in the context of learning outcomes of programmes.
- 10.17. The issue of termination of redundant courses was considered. Mechanisms to terminate delivery were discussed.
- 10.18. The assessment strategy was considered, and in particular, how assessments are linked to learning outcomes. The issue of over assessment was also considered, particularly in the context of a semesterised course. Mechanisms of obtaining feedback from students on issues relating to assessment were considered.
- 10.19. The issue of students entering on ladder structure or onto four and five year ab-initio courses was considered. Given the diversity of student demands, flexibility of provision is required. The system allows students to accumulate credit. Many students have a wish to initially register for a four year honours degree.
- 10.20. Retention and fallout rate was considered. The significance of level of literacy and numeracy was discussed. The effectiveness of solutions put in place to address these issues such as drop-in centres for maths were considered. The importance of report writing skills was emphasised. Individual problems of retention are being addressed by individual course boards.
- 10.21. The School policy to support and encourage a wide variety of teaching styles was considered. .

11. Panel session 4a: Details of computing and horticulture courses

- 11.1. The panel complemented staff on clarity, presentation and readability of the documentation provided.
- 11.2. Learning outcomes at programme level were considered. The re-validation exercise against the NFQ standards was referenced and documentation relating all programmes to the framework standards was submitted. All module syllabi have learning outcomes and the programme learning outcomes are addressed in the re-validation exercise.
- 11.3. Planning and co-ordination of assessments and the use of an assessment diary was considered
- 11.4. For BN002, it was proposed to delete the optional language modules which have never been taken and to delete the business electives. It was proposed to reduce the number of modules to 5 per semester and move some modules to 100% continuous assessment to reduce examination overload. There were some suggestions relating to titles of modules to reflect more accurately their content. The issue of how to appropriately present results of modules given 100% CA for extern examination was discussed. Credit allocation was considered and the option of allocating multiples of 5 rather than 7.5 as proposed was considered
- 11.5. For BN302 no major changes were proposed. Some material is proposed to move from level 6 to level 7. A module on data mining was proposed to replace one on knowledge discovery and data. It was proposed that a module on distributed databases is replaced with a module on XML and web services.
- 11.6. For BN402 flexibility of delivery was proposed with reduced emphasis on mandatory modules. The structure proposed will allow streaming into one of two core areas of software engineering or computer infrastructure. This has changed status of two modules previously categorised as mandatory modules. Additional electives are proposed. It was noted that while the change suggestions appear substantial, the material effect on a student is that over 80% of the programme will be similar to the previous programme.
- 11.7. For BN509 some modules were renamed. One elective was split into two electives and some additional electives were proposed.
- 11.8. For BN512 four new electives were proposed along with some minor amendments to syllabi
- 11.9. For BN904, it was noted that it was suggested that this programme is dropped from the suite of approved courses
- 11.10. For BN007 and BN008, a new mandatory module is proposed in year 1 to ensure students engage with skill component of the course. Some CA:final mark distributions were amended as a consequence of removal of some work practice to a separate module. A title change was proposed for one module
- 11.11. For BN008, a proposal to alter one mandatory module to be called plant material and use as a replacement for plant identification and use in BN007 was proposed. The differences in learning outcomes were considered.

12. Panel session 4b: Details of engineering courses

- 12.1. The panel told the group that they plan to talk about current and past courses and how the courses will progress.
- 12.2. BN001 – The course board recommend an additional programming module in 2nd year. As two modules overlapped it was proposed to drop one and introduce an additional programme module. Consultation with stakeholders including graduates, industry and students has taken place. There were no recommended changes in the document regarding assessment. Learning outcomes have been revised for this programme.
- 12.3. Maths is a problem regarding attracting more students. A maths clinic has been set up where students have one to one tutorials with lecturers. This has proved very successful. It has increased student's confidence. The staff were aware of the huge diversity and the challenge that this presents. It was apparent that they were very flexible in their approach and were fully inclusive of all students.
- 12.4. One of the most common times for students to leave their chosen course is in the first two weeks. With that in mind, the School organised a 2 week induction, which incorporated laboratory work only. This was found to be most effective and the number of students who would have normally dropped out in the first two weeks has declined almost to zero. Another important tactic to increase retention is to keep students motivated through PBL (problem-based learning). This has positive outcomes when student engage fully.
- 12.5. BN301 –The course board considered that there were good subject streams and that the graduates were well prepared for Industry or for further study. Major changes recommended by the course board include: 1) Propose running the project over 2 semesters to allow sufficient time to meet the learning outcomes. Feedback from Industry indicated that practical skills gained in the project are very useful. 2) As there were overlaps between two modules, it was proposed to reduce this to one module: 'Interfacing'. This allows more time for the project. 3) PBL modules were proposed for the second semester. These changes will benefit the students as they will receive more course content (they won't lose any). One of the modules is dedicated to Business Communications in the first year of the Higher Certificate. There was also a desire to attract students from other colleges and the different learning experiences are being addressed during the first couple of weeks of the course.
- 12.6. BN401 – This is a recently established course. The course board recommended that two more electives be added: 1. Entrepreneurship Skills and 2. Computer and Machine Vision. It was also proposed to introduce PBL in 2 modules in year 1 as feedback indicates that this would be well received and comments from Externs support effort to reduce the number of exams in the first semester. Add 1 extra hour of contact time. Rebalancing of CAs in part to 50/50.
- 12.7. BN401 – The question was asked as to the importance of Industrial placement in relation to the learning process of the degree? Are students getting the appropriate set of skills to go out into the workforce? Staff did not see how there was time for a six month placement. However, the board indicated their intention to explore the possibility of implementing an internship model. Regarding the topics of business management and commercial negotiations for service providers– the question was asked of the course board as to how they ensured that students had these skills – The new stream of modules has an entrepreneurship module aimed at

students setting up their own business, which should include some negotiating skills. The internship will also address a lot of these issues.

- 12.8. BN009/BN407 Mechatronics – This programme has completed only one full cycle and no major issues for change were being proposed. There were some overlapping topics and some minor changes were being recommended, particularly in respect of programming.
- 12.9. The request for additional resources was noted. The course board recommended that a set of specialized labs be provided to meet learning outcomes. Technical support was also being sought for these laboratories, including one Mechatronics technician and one Engineering technician.
- 12.10. BN407 – Following BN009. Not yet run
- 12.11. BN903 – First Graduates last September. Some minor recommendations for change were made. As the programming skills were weak it was proposed to introduce a module similar to the BN009 Programming Module.

13. Panel session 5: Meeting with students

- 13.1. In general, students were happy with facilities and service provided by the Institute. They liked working in the Institute and learned a lot. Students appreciated small classes. Generally a full class plan for assessment was provided, although specific dates were not always provided at the start of semester. A course handbook is provided. Distribution of assignments can be a problem. Student representatives can easily meet with lecturers and feedback is good after course boards. A suggestion was made to have completion dates for all assignments at least 4 weeks before examinations to allow time for revision.
- 13.2. Students find staff very approachable. They can also be contacted by e-mail. Feedback on assignments is satisfactory, although in some cases mark is returned without explanation as to where or why the student performed badly. Some students appeared unaware of the mechanism for finding out why they did badly.
- 13.3. Third year horticulture students consider that they have a large number of projects to complete in a very short term as they do not return to college from placement until November. A suggestion was made to shorten placement as that is a pass/fail subject and the late return from placement is compromising results in other subjects.
- 13.4. Placements for horticulture students are generally well organised, with some students choosing their own placement location. In most cases, placement monitoring is satisfactory in most cases and monitoring is done by Teagasc staff.
- 13.5. Maths tutorials were flagged as an issue. Students would appreciate one to one tutorials if necessary
- 13.6. QA questionnaires are completed in most classes. However, students don't appear to receive feedback on the data that is collected
- 13.7. Some students raised a concern that while a lecturer is present during laboratory sessions for computing, the lecturer will not help students when doing CA assignments but will do so in other class situations.
- 13.8. In the case of Mechatronics labs, there is an assumption of knowledge of machines at the start. Some students suggested lecturers make no assumptions about prior knowledge. Labs area good learning experience, but there are a lot of separate projects to complete.

- 13.9. Students enjoy PBL learning mode. They consider it is easier to learn.
- 13.10. Students are aware of examination appeal procedure
- 13.11. Students are aware of student support facilities for personal issues
- 13.12. Students support substantial marks for ca, and consider 70% for final examination to be too severe.
- 13.13. With regard to falloff in enrolment in computing and engineering, students felt that competence in maths was a major issue. Pass maths at Leaving Certificate is not enough to handle 1st year 3rd level mathematics. Some students are reluctant to reveal their weakness in maths. The library has a shortage of honours maths books. Students have an awareness of maths drop in centre. There is a high level start in maths that puts students under pressure from the first day, but they consider maths relevant, although contributing to drop-out rate.
- 13.14. Students considered preparation for employment. Some described an identity crisis after 5 years. What work can you do on qualifying? Students support work placement in courses like the engineering internship in fourth year. Careers service needs improvement, with opportunity to engage in mock interviews. It was suggested that there is a communication module in first year including interview skills and CV preparation skills. Presentations could be introduced earlier than third year to increase confidence.
- 13.15. With regard to projects, students felt most computing projects were software based and little opportunity for network-based projects
- 13.16. Students suggested there were relatively few guest lecturers engaged. They suggested asking past graduates to return to the Institute and talk about their experiences
- 13.17. Students would consider a 1 year work placement between 3 and 4 yrs
- 13.18. Horticulture students consider that the library horticulture book stocks are not of much value to them. There is a better library in the National Botanic Gardens. Horticulture students also suggested that business component of the course should be highlighted in interviews at admission so that candidates are not surprised at the content when they commence the programme.
- 13.19. Students would appreciate more access to computers. Having unoccupied labs locked leads to frustration. Not being able to access the network from a laptop is unsatisfactory. Students suggested that some computer laboratories are removed from timetable for periods longer than one hour to allow work on projects.
- 13.20. It was suggested that more than one week revision time is needed after semester 2.
- 13.21. There was a different culture evident between the National Botanic Gardens and ITB. Students are provided with more direct support in the Botanic Gardens compared to ITB where they are expected to learn more for themselves.

14. Panel session 6: Tour of facilities

- 14.1. Due to time constraints, the tour of facilities was not conducted.

15. Panel findings and recommendations:

15.1. The staff of the Institute are to be complimented on the following:

- Enthusiastic and constructive commitment and participation in this review by students and staff;
- Quality of documentation provided to the review group, including comprehensive self study with strong swot analysis;
- Level of achievements to date including implementation of a strategic plan for the School and Departments;
- Good evidence of engagement and collaboration between staff
- High level of research activity

15.2. The following comments are made:

- Panel members found it difficult to extract from the documentation, information relating to changes at a high level and what are the key issues for the School that need to be addressed, such as what are the School's own priority recommendations for programmes, staff training, facilities etc.
- Some issues such as best practice, how to deal with student drop-out and solutions for common entry were difficult to find in the documentation
- Strategic academic issues could be addressed at School level rather than at course level.
- Due to the involvement of partner colleges, delivery of the horticulture academic programme was recognised as a challenging process. However, inter-college delivery is noted as an important component of the delivery of the horticulture course
- Application of common modules is supported and may be beneficial in bringing students from several disciplines together in an appropriate learning environment
- Specific challenges relating to falling numbers within the CAO system, interest in science and engineering courses and challenges relating to completion of programmes by students is noted

15.3. The panel recommend all proposed changes for approval for a period of 5 years subject to the following specific recommendations below.

School management

- Need to clarify for themselves, what is being sought and what is the proposed strategy for the future. It is suggested that the School consider a system for translating vision to strategy to implementation and recording progress
- Embark on period of consolidation as a balance to an extremely busy previous 5 years
- Consider establishment of a formal industrial liaison board
- Consider generation of a staff training and development needs plan
- In future reviews, clarify how strategic goals of School have been met
- Need to develop a clear view for the unique identity of the School.

- Consider technical support requirements for mechatronics and engineering programmes

Programme design

- Explore opportunities for delivery of common modules
- Changes to programmes recommended by the School and syllabi are accepted unless in conflict with specific recommendations listed in this section of the report;
- New modules proposed through this programmatic review should be subjected to a peer review process to approve learning outcomes, syllabi and assessment strategies. This applies to BN402, BN509 and BN512.
- Consider coordination of the timing of assignments with collaboration between module lecturers to reduce examination loading on student
- Consider standardising allocation of credits in multiples of 5 for academic programmes. This would map to National and International trends. Specifically, the proposal in BN002 to allocate 7.5 credits to two modules should be revisited and it is suggested that one module is allocated 10 credits and the other 5 credits.
- For BN008, the proposal to alter one mandatory module to be called plant material and use as a replacement for plant identification and use in BN007 as proposed appears to materially alter the status of having one academic course offered in two locations to having two discrete academic courses. This change could have substantial implications above academic issues, relating to examination systems and marketing of the courses. The panel recommend that this issue is referred to Institute management for a final determination.
- Consider the introduction of work placement into programmes.
- Consider a mechanism for assessment of placement and if possible allocating marks to placement in horticulture course in particular, and for all courses containing placement if possible.
- Consider the rate of delivery of mathematics, particularly at the start of semester 1, and the likely impact on weaker students, or students with ordinary level mathematics from their leaving certificate.
- The suggestion not to revalidate BN904, (Higher certificate in science in computing in systems support) is supported

Access transfer and progression

- Consider strategies for increasing visibility of progression pathways, through academic programmes, particularly in the context of proposed common entry.
- Retention issue should be managed proactively. Retention requires a School policy. Resources should be specifically directed to retention analysis and rectification. Consideration should be given to a module on becoming a third-level student, including introduction to third level education and learning to learn, as a specific retention initiative;
- In the admissions and interview process, highlight the business and marketing component in horticulture programmes to ensure that candidates are fully aware that this is part of the programme learning outcomes.

Programme delivery

- Exploit the advantage of small class groups to support group learning.
- Consider the structure of course boards particularly with regard to continuity into subsequent years of courses, where courses are structured in a ladder of courses, but course boards operate independently.
- Where changes to module sequence results in a difficulty for existing students (for example where a module is moved to a subsequent year, such that current students will already have taken the module) specific short-term solutions are to be proposed to the Registrar.
- Consider use of guest lecturers and recent graduates to complement academic programmes, particularly in the latter years of programmes.

Examinations

- Consider the timing between the due date for assignments and the end of semester examinations, allowing a period of time between these events in as much as is feasible.
- Consider a mechanism of effective external examining of modules that are allocated 100% CA marks, with no final written examination.
- Consider development and implementation of policy relating to plagiarism within assignments and a plagiarism checking process, perhaps including web-based scrutiny;

Student supports

- Provide additional careers advice supports, possibly including mock interviews, and input from graduates to describe possible career paths
- Consider wireless access for students with personal laptop computers
- Consider making some laboratories available for periods longer than 1 hour to facilitate project work
- Consider a mechanism of providing feedback to students, particularly relating to quality assurance course assessment surveys.
- Consider revision time available at the end of semester 2

15.4. It was noted that the self-evaluation report included proposals relating to development of new programmes as combinations of individual programmes previously approved as sequential programmes in a specific ladder of learning. The programmes referenced were

- Bachelor of Engineering in Computer Engineering (BN012),
- Bachelor of Engineering (Honours) in Computer Engineering (BN106),
- Bachelor of Engineering (Honours) in Mechatronics (BN105),
- Bachelor of Science in Computing (BN013)
- Bachelor of Science (Honours) in Computing (BN104).

While the academic content of these programmes are in effect being considered as part of the programmatic review process as the constituent awards are under evaluation, the issue of new course development is technically outside the scope of programmatic review. Thus, it is recommended that these five courses are considered outside the

programmatic review process having completed the review of the constituent programmes.

- 15.5. The following courses are recommended for re-validation for a five year period until the next programmatic review:

Code	Title	NFQ level
BN001	Higher certificate in engineering in electronics and computer engineering	6
BN002	Higher certificate in science in computing in information technology	6
BN007	Bachelor of science in horticulture	7
BN008	Bachelor of science in horticulture	7
BN009	Bachelor of engineering in mechatronics	7
BN301	Bachelor of engineering in computer engineering	7
BN302	Bachelor of science in computing in information technology	7
BN401	Bachelor of engineering (honours) in computer engineering	8
BN402	Bachelor of science (honours) in computing	8
BN407	Bachelor of engineering (honours) in mechatronics	8
BN509	Higher diploma in science in computing	8
BN512	Master of science in computing	9
BN903	Higher certificate in engineering in mechatronics	6

16. Follow-up actions

- 16.1. The following actions were noted and remain to be completed:

May 2006	Forward panel report to HETAC
May 2006	Forward panel report to Academic Council
June 2006	Publish report on website
June-September 2006	Incorporate agreed changes into literature
September 2006	Follow up report of actions to Academic Council

Signed on behalf of peer-review group

Dr. Brendan McCormack (Chairman)

Dr. Diarmuid O'Callaghan (Secretary)

Date: _____

17. Appendix: Relevant Institute policies

17.1. Extract from 2MP15 Monitoring and evaluation of academic programmes:

1. Procedure

- It is Institute policy to review the academic content of each programme at least once every five years. However, programmatic reviews may be initiated at any time at the request of HETAC, the Director or the Academic Council of the Institute.
- Procedures for programmatic review will follow current National and International best practice.
- Where feasible, periodic programme evaluation will be carried out on a group of related programmes at the same time. Versions of a course offered in full-time, part-time, ACCS and work-based training modes will be evaluated at the same time.
- Periodic programmatic review will include three phases, an internal self evaluation phase leading to a self-evaluation report, an external evaluation phase leading to a final programmatic review report and a period of change implementation leading to a final follow-up report to Academic Council.

2. Self-evaluation

- The internal evaluation phase will commence with a critical self-evaluation of the academic programme, or suite of programmes. The emphasis should be on reflection, analysis and improvement.
- The primary objective of self-evaluation is to answer four key questions:
 1. What are you trying to do? This refers to the mission, aims and objectives, their appropriateness, and how the section positions itself locally, nationally and internationally.
 2. How are you trying to do it? This addresses process, procedure and practice in place and requires an analysis of their effectiveness.
 3. How do you know it works? This looks at feedback systems in place in particular for quality monitoring and quality management.
 4. How do you change in order to improve? This examines issues of strategic planning and quality improvement as well as capacity and willingness to change.
- Self-evaluation will include a phase of self-investigation involving:
 - All academic staff involved in the programmes
 - Learner representatives
 - Graduates of the programme
 - Support service providers
 - Employers of graduates
 - Other stakeholders
- The Head of School of the area under review will initiate and manage the self-evaluation process on behalf of the Academic Council.
- Membership of the internal group tasked with drafting the self-evaluation report will be determined by the Head of School. Typical composition would include:
 - Head of Department or senior academic

- Representative academic staff members
 - Executive assistant
 - Technical staff representative
 - Academic staff member active in research
 - Postgraduate student
- Internal self-evaluation report will include:
 - Executive summary
 - Overview of programmatic review process
 - Critical changes proposed to academic programmes
 - Justification for changes
 - Detailed information about the Department, and the perceptions of staff and students of their role
 - Statement of the strategic objectives of the Department
 - Identification of quality systems and processes that are currently in place and an assessment of their effectiveness
 - A self-critical analysis of the activities of the Department which includes:
 - Review of course delivery and assessment of learning
 - Evaluation of extent of meeting the learners needs
 - Evaluate demand projections for following five years
 - Evaluate physical facilities available for the course
 - Evaluation of services related to the programme
 - Evaluation of links established with industry, business and the wider community in order to maintain relevance of the course
 - Evaluation of research activities in the area under investigation
 - An analysis of strengths, weaknesses, opportunities and threats and suggested appropriate remedies where necessary
 - Identification of weaknesses in procedural organisation and other actions that are under the control of the Department which can be remedied by action
 - Identification of shortfall in resources
 - A framework within which the unit can continue to work in the future towards strategic and academic changes and quality improvement
- The self evaluation will address the time period since the last programmatic review or since the programme was established
- The self-evaluation process will include evaluation of relevant course board annual reports that were generated in the previous years (4RCD01)
- The self-evaluation process will culminate in a self-evaluation report, which will set out the findings of the self-evaluation, including an evaluation of the programme
- The format of the self-evaluation report will follow the format of an agreed template indicated below
- The final self-evaluation report will be submitted by the Head of School to the Registrar by agreed dates.

3. External evaluation

- An external evaluation of the programme will follow self-evaluation. This will be arranged by the Registrar.
- External evaluation will be conducted by a peer review group from outside the Institute and may include:
 - Stakeholder representative

- Competent person to make National and International comparisons in relation to the programme
- Academic peers
- Social partners
- Professional associations
- Learners and alumni of the Institute
- The secretary to the external review panel will be responsible for drafting the external evaluation report. The Secretary will be agreed between the Head of School, Registrar and Chairperson of the external review group.
- The chairperson of the group will be agreed between the Institute and HETAC
- Typical composition of the external evaluation group will be (taking gender balance into account):
 - Head of School from another Institute of Technology
 - Two academics from other Institutes of higher education (preferably one from overseas)
 - One person from other stakeholders listed above
 - Specialist (if required)
 - Registrar of Institute (secretary)
 - Representative from HETAC (by invitation)
- The composition of the external evaluation group will be determined by the Director in consultation with the Registrar and Head of School.
- External evaluation will be conducted in accordance with current international best practice
- The external expert group will:
 - Review the self-evaluation report
 - Conduct investigation of the programme
- The external evaluation should be conducted in the spirit of co-operation, consultation and advice between the expert group and internal staff
- The roles and responsibilities of external experts are documented (2MP17)

4. Final evaluation report

- External evaluation will culminate in a final evaluation report setting out the findings of the review groups.
- The final report will be drafted as a combined report of the external and internal review groups by both groups in partnership.
- Institute management will comment on the draft report before final publication
- A copy of the final evaluation report will be forwarded to HETAC and published on the Institute website

5. Continuing improvement through follow-up actions and reporting

- The final evaluation report will be considered by Institute Management.
- The Institute will where possible implement any recommendations arising from the internal self-assessment report or the external evaluation report along an agreed timetable.
- A final follow-up report will be submitted by the Head of School to Academic Council indicating changes made and evidence of quality improvements.

17.2. Extract from 2MP17 Roles and responsibilities of external experts on validation and review panels:

- The functions of peer-review groups are to:
 - Study the self-evaluation report
 - Visit the unit (typically over one day) and meet staff, students and other stakeholders
 - Clarify and verify details in the self-assessment report and consider other relevant documentation
 - Review activities of the unit in the light of the self-assessment report
 - Consider if recommendations in the Self-study report are consistent with, and are supported by, the Self-study findings
 - Participate in drafting final evaluation or programmatic review report listing recommendations for improvement.

//end