

Validation Report



BN113

Bachelor of Science (Honours) in Horticulture

(240 ECTS credits leading to NFQ Level 8 Award)

with the following embedded programmes

BN022

Bachelor of Science in Horticulture

(180 ECTS credits leading to NFQ Level 7 Award)

BN406

Bachelor of Science (Honours) in Horticulture

(Add on award to BN022 - 60 ECTS credits leading to NFQ Level 8 Award)

Introduction

The Institute of Technology Blanchardstown was established in 1999. The mission of the Institute is to serve its students and the community by meeting the skills needs in the economy and increasing the level of participation in third-level education and training, particularly in Dublin North-West and its environs.

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

In keeping with the Institute's mission statement, course and programme development is on-going. This programme supports the mission of the Institute and facilitates much wider access to the Institute by a cohort of potential students whose needs are currently not being met.

The purpose of this document is to report on the findings of the peer review panel established to validate this proposed programme against the criteria for the validation of programmes as stipulated in the Institute policy document 2MP01¹.

This submission by the Centre for Multidisciplinary Studies evolved through:

- examining the competence, expertise and experience of its staff in addition to the strategy of the department/school/Institute and Government educational policy
- responding to Government research, based on industry consultation and feedback to remodel the existing provision
- responding to student demand and an Institutional commitment to provide progression opportunities to NFQ level 8

¹ 2MP01 Design, validation and accreditation of new academic programmes

Programme overview

The purpose of the proposed Bachelor of Science (Honours) in Horticulture is to equip students with the skills and knowledge to embark upon a rewarding career in the Horticulture industry and in the wider Horticulture sector. Successful practice in this area requires a combination of scientific knowledge, technological know-how, and creative design skills, all in the context of a critical understanding of the industry context. This programme aims to provide this combination of skills and knowledge, and in doing so to put its graduates in an ideal position to operate at the heart of the sector.

IT Blanchardstown in partnership with Teagasc¹ have been producing graduates with a Bachelor of Science in Horticulture (Level 7) from 2004 to date. The aim of this programme is to incorporate the original offering and further develop to produce honours degree graduates with the balance of practical knowledge and skills in Horticultural practice and in the working environment, together with a science focused knowledge stream.

The knowledge and skills delivered during the programme cover six broad thematic areas:

- Professional development
- Business practice
- Design and construction
- Science
- Production and management
- Techniques

Professional development

The student will study modules specifically concerning professional practice and their personal development, project management and working in the Horticulture industry. The students' working practices will continually evolve through the completion of assignment and project work at all levels of the programme, forming core taught elements of these modules. The student will also experience the Horticulture industry first hand through the work placements in Semester 2 of year 1 and Semester 1 of year 2.

¹ The Irish Agriculture and Food Development Authority

Business practice

Students will acquire a practical and thorough grounding in the financial, marketing and management elements of running a business. The Level 8 graduate will be playing a leadership role in their future career, and so the modules on offer in the final year allow the potential business manager or entrepreneur to equip themselves to take on these challenging roles.

Design and construction

This stream is delivered through a suite of modules covering the principles of landscape design in horticulture and their application in practice. The student will acquire the fundamental skills of drawing and surveying, developed later on for CAD¹, and the knowledge of machinery and 'hard' and 'soft' construction skills, necessary to implement elements of proposed designs. The level 8 graduate is also offered the opportunity to study the social and societal context of their design work, including an offering on universal access, a growing paradigm within all areas of design.

Science

This stream is core to any proper grounding in the scientific knowledge required to work effectively with plants in any context. Students acquire the basis of scientific knowledge of botany and biology, and in particular come out with a strong grounding in plant identification, a vital skill for any horticultural practitioner. These elements of knowledge do not end with the modules bearing their name, but are enhanced in differing contexts in further years of the programme. The programme is also strongly influenced by concerns over sustainability, biodiversity and environmental degradation, both social and physical. The student will study these concepts in particular modules in the second and third years, but the knowledge gained will be drawn upon throughout the programme.

Production and management skills

This stream includes core skills required for successful practice in the horticulture sector. The student acquires the knowledge required to produce plant of varying types, to manage a range of landscape types including turfgrass, woodlands, forestry and ecosystems and other social amenities.

¹ Computer-aided design

Techniques

Finally the student draws upon techniques learnt in modules on IT skills vital for any professional practice in the modern world, and may avail of subsequent opportunities to enhance their knowledge of current technology, such as the Internet, in terms of communications, or automation for production purposes.

Programme detail

Programme title Bachelor of Science (Honours) in Horticulture

Award title Bachelor of Science

NFQ^I level 8

ECTS^{II} credits 240

Programme code BN113

Banner code BN_SHTSC_8

Embedded awards

Institute code	Banner code	Title	NFQ Level	ECTS Credits	Format
BN022	BN_SHTSC_7	Bachelor of Science in Horticulture	7	180	Ab initio
BN406	BN_SHTSC_B	Bachelor of Science (Honours) in Horticulture	8	60	Add on

^I National Framework of Qualifications

^{II} European Credit Transfer and Accumulation System

Panel members

Chairperson	Dr. Annie Doona Dun Laoghaire Institute of Art Design & Technology
Panel member 1	Dr. Peter McLoughlin Waterford Institute of Technology
Panel member 2	Mr. Declan Fennell Bord Bia
Panel member 3	Mr. John Cullum Writtle College – UK
Panel member 4	Mr. Les Moore Dun Laoghaire Rathdown County Council
In attendance	Dr. Diarmuid O'Callaghan IT Blanchardstown Mr. Michael Keane IT Blanchardstown
Date of Panel Meeting	Tuesday 31 st March 2009

Institute staff present

Session I Meeting with President, Head of School, Head of CMS¹

Dr. Mary Meaney President
Mr. Larry McNutt Head of School of Informatics and Engineering
Mr. Damian Cox Head of Centre for Multidisciplinary Studies

Session II Head of School, Head of CMS & Programme Leader(s)

Mr. Larry McNutt Head of School of Informatics & Engineering
Mr. Damian Cox Head of Centre for Multidisciplinary Studies
Mr. Christy Boylan
Ms. Rachel Freeman

Session III Meeting with Lecturing Staff

Mr. Damian Cox Head of Centre for Multidisciplinary Studies
Mr. Pat O'Connor Head of Department of Business
Mr. Christy Boylan
Ms. Rachel Freeman
Mr. Joe Smith
Ms. Fionnuala Darby
Ms. Frances Murphy

¹Centre for Multidisciplinary Studies

Panel findings

Section I

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

Strategic planning

The panel was satisfied that the programme is in keeping with the Institute's mission, that it does not constitute redundant provision and that it makes efficient use of resources. The panel noted the partnership delivery model between the Institute and Teagasc that has been operating to date. The panel noted the President's communication relating to possible changes in this relationship going forward. The panel raised concern with regard to planned staffing arrangements and the availability of the required physical resources to deliver the programme in the event of a change in the partnership arrangement with Teagasc. See conditions of programme validation.

Rationale and evidence of consultation

The horticulture industry in Ireland comprises a very diverse sector, ranging from the production of food crop fruit and vegetables to the production of trees, shrubs and other plants for parks, gardens and landscape purposes. It also comprises the use of glasshouses and plastic structures for the cultivation of plants for commercial use as food crops, e.g., mushrooms, flowers and indoor plants. The retail sector has grown tremendously in the last ten years, with large numbers of garden centres, with nurseries and other facilities to supply them, being established in this time. Bord Bia, the state agency for the promotion of food and horticulture has calculated that in 2007, the value of the amenity horticulture industry alone (non food crops) in production terms is of the order of €20m. However, when food crops are included, the value of the industry is several times greater. There is also the added value of the wholesale and retail sector. Significant employment is also found in the landscape construction and maintenance sectors, including public parks, golf courses and private gardens, all vital to the tourism and recreation industries, another sector of the economy which showed significant growth during the past decade. It is therefore clear that the sector makes a considerable contribution to the Irish economy.

Practice in the horticulture industry can be viewed as the convergence of a broad range of scientific technical, management and production disciplines, therefore graduates of the programme will have core technical competencies that can be applied to a wide range of work. The combination of technical competence and

the ability to critically reflect on the efficiency of communication techniques will provide graduates who can contribute qualitatively wherever they may choose to work. This is increasingly important in the modern horticulture industry, which has become increasingly sophisticated over the years. At the same time, these are skills that have always been vital for the leader of a public sector department, a business concern or a research establishment.

The Irish government has established Forfás as: “the national policy and advisory board for enterprise, trade, science, technology and innovation. It is the body in which the state’s legal powers for industrial promotion and technology development have been vested. It is also the body through which powers are delegated to Enterprise Ireland for the promotion of indigenous industry and to IDA Ireland for the promotion of inward investment.”

In particular, Forfás has published the reports of the Expert Group on Future Skills Needs (EGFSN), established by Government to advise on the Skills needs of the Irish economy, anticipating future trends in economic and technological development and their impact on the Irish economy. In particular “The Group’s mandate provides that it will act as the central national resource on skills and labour supply for the enterprise sector and an overall strategy for enterprise training in Ireland.”

The following publications are of relevance to the identification of skills shortages and the direction indicated from this by Government for the education sector:

- Tomorrow's Skills: Towards a National Skills Strategy (March 2007)
- Monitoring Ireland’s Skills Supply: Trends in Education/Training Outputs (June 2007)
- Tomorrow's Skills: Towards a National Skills Strategy (March 2007)
- National Skills bulletin (November 2007 and previous)

These reports have drawn upon the views of leading industry figures and information from the Central Statistics Office to assess the requirements for those skills necessary to ensure the continued growth of the Irish economy. These reports essentially point to the following picture of the Irish economy.

The decline in the traditional agricultural and manufacturing has continued, and indeed gathered pace over the last decade. In tandem with this, there has been a growth of the service and amenity provision industries, including the leisure and tourism industries. The sporting industry in particular has shown dramatic growth in this time. All these sectors rely on the existence of landscaped amenities, sports fields and facilities of various types, and access to green space and rural and wildlife areas.

In tandem with the decline in the traditional industries of manufacturing and agriculture, and the growth of the service and leisure provision sectors, there has been a decline in employment opportunities for staff qualified to level 5 and similar on the NQAI framework of qualification. Indeed, significant numbers of those employed in the horticulture sector are at this educational level. There has been a corresponding growth in the need for graduates at the ordinary degree and honours degree level to address the more flexible requirements of a service based industry and the dynamism of the wider leisure sector in Ireland. Significant managerial, leadership and business skills are also necessary in today's competitive commercial environment, together with a substantial increase in entrepreneurial and enterprise development activity to move away from the dependence on larger business concerns. This requires significantly more numbers of level 7 and 8 graduates with appropriate skills.

These leadership and management skills in the horticulture sector are also a key requirement for public and private organisations seeking to address the demands and concerns of the wider population becoming more educated on environmental sustainability and pollution issues. Local authorities, government organisations and regulatory agencies are increasingly implementing changes in law and in directives on this issue, including at the European level. From this both public organisations and private and commercial concerns need to adjust their behaviour and practices to reflect these changes. A steady supply of appropriately educated graduates is needed to bring about this change in the sector.

The panel was satisfied with the rationale for the proposed programme and the Government research, based on industry consultation, including feedback received from past graduates and local industry as evidence of consultation.

Learner employment potential

Graduates of the proposed Bachelor of Science (Honours) in Horticulture will have the knowledge and skills to take up employment in a broad number of areas within the horticulture industry, including the landscape sector, commercial production and scientific research sectors. They will also be competent to serve in local authorities as advisors on the need for, the use of, and management of the resources necessary to provide amenities such as sports facilities, parks, playgrounds and other green urban or rural spaces.

Graduates of the level 7 Bachelor of Science programme will occupy an appropriate leading practitioner role in a relevant organisation. They will be able to apply the broad range of technical skills they have acquired to a variety of projects in the areas of work described above, complemented by the scientific and design skills to generate new ideas and operate in an interdisciplinary environment. They will be able to operate as effective horticulture practitioners by

applying many different tools and technologies and will be in a position to learn new horticultural techniques as they arise, as directed in the workplace. They will perform functions from raft level to various in-line supervisory and management roles.

Protection of learners

Section 43 of the Act¹ does not apply.

Quality assurance

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

Programme titles and award titles

Following discussion, the panel was satisfied that the title of the proposed programme, and its embedded sub-awards is clear, accurate and fit for the purpose of informing prospective learners and other stakeholders and consistent with HETAC award titles.

Ethics

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

¹ Qualifications (Education and Training) Act, 1999

Section II

In evaluating this programme the following specific aspects have been considered and are hereby reported upon:

Unity

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

Teaching and learning

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

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

- survey of students by lecturer
- summary of survey of students by lecturer
- survey of students by department
- course boards

The panel however raised concerns over the contact hours particularly within years 3 and 4 of the proposed programme. See recommendations.

Learner assessment

Through discussion with the design team, and from the submission document itself it was explained in detail to the panel the multiple modes of assessment, both formal and informal that will be employed. These included project work, assignment, self and peer assessment and group project assessment.

Standards of knowledge, skill and competence

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

Access, transfer and progression

The programme incorporates the established procedures for access, transfer and progression allowing students to choose from various entry and exit points that support clear transfer and progression routes within the National Framework of Qualifications (NFQ).

Decision of the panel

The panel recommends the validation of the proposed programme including its embedded awards namely:

Banner code	ITB code	Programme title	Award title	ECTS credits	Format
BN_SHTSC_8	BN113	Bachelor of Science (Honours) in Horticulture	Bachelor of Science (Honours)	Level 8 240 credits	Ab initio
BN_SHTSC_7	BN022	Bachelor of Science in Horticulture	Bachelor of Science	Level 7 180 credits	Ab initio
BN_SHTSC_B	BN406	Bachelor of Science (Honours) in Horticulture	Bachelor of Science (Honours)	Level 8 60 credits	Add on

Conditions

This validation is subject to the following conditions:

1. Staff with the appropriate qualifications, experience and skill sets are available to deliver the programme. In this regard it is suggested that a list of skill sets required to deliver this programme is drawn up.
2. Appropriate physical resources required to deliver the programme not currently present are identified and made available. In this regard it is suggested that a list of physical resources required to deliver this programme is drawn up.

Panel recommendations

1. Consider introducing more horticulture content into the first year of the programme using means as discussed at the panel meeting. This may involve deferring some business modules or non core horticultural technical modules.
2. Rework some modules as identified at the panel meeting to include more science. Topics that may require more in-depth coverage include:
 - Soil science and chemistry
 - Soil microbiology
 - Plant pathology
3. Reconsider the overall syllabus for those students interested in commercial horticulture with a view to including more focus on modern day food horticulture, particularly in post production added value in areas such as :
 - New product innovation / market outlets
 - Improving product shelf life / quality assurance
 - Post harvest logistics
 - Supply chain management
4. Consider broadening the sustainability element throughout the programme as discussed at the panel meeting. Consider sustainable eco industries and generation of high value products from sustainable sources.
5. Re-orientate and re-title non horticultural modules to reflect a less generic and more horticultural perspective (where modules are not used as generic modules from other academic programmes).
6. Consider amalgamating the following modules into a single offering given the specialist nature of their content:
 - Turfgrass establishment and maintenance
 - Golf course design and management
 - Synthetic sports surfaces
7. Consider amalgamating the following modules into a single offering thereby eliminating any unnecessary repetition:
 - Arboriculture 1
 - Arboriculture 2

8. Reconsider the contact hours particularly within years 3 and 4 aiming for a maximum more in line with national standards for science programmes (typically between 18 and 20 hours).
9. Reconsider the content of the module “Research Methods” to include a broader range of competencies.
10. Consider strengthening the soil chemistry and nutrition component and including soil microbiology in the module “Soil Science and Plant Nutrition”.
11. Consider expanding the module currently titled “Historic Park and Gardens” to include contemporary parks and gardens with a view to looking to the future.
12. Make other technical and minor amendments as discussed at the panel meeting.

Panel observations

The panel commended the dynamic that IT Blanchardstown has brought to the education of horticulture students and the responsive nature of the proposed programme in providing a progression route for existing level 7 graduates.

Panel signatures

Chairperson

Dr. Annie Doona _____ Date _____

Secretary

Dr. Diarmuid O’Callaghan _____ Date _____