SCOTTISH AGRICULTURAL COLLEGE

REPORT OF THE REVIEW OF PROGRAMMES IN THE HORTICULTURE SUBJECT GROUP HELD AT SAC EDINBURGH ON 31ST MAY – 1ST JUNE 2011: Re-validation of BSc/BSc(Hons) Horticulture and BSc/BSc(Hons) Horticulture with Plantsmanship

Review Panel

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1.   Introduction

1.1   The programmes under review were as follows:
- HNC/HND Garden Design
- HNC/HND/BSc/BSc(Hons) Horticulture
- HNC/HND/BSc/BSc(Hons) Horticulture with Plantsmanship
- HNC Landscape Management.

The BSc/BSc(Hons) degrees are validated by the University of Glasgow. The HNC/HND awards are validated by the Scottish Qualifications Authority (SQA). The HN awards and the degrees were last re-validated in 2006. The SQA's current approach is to maintain the currency of awards through incremental change rather than major re-validation after a set number of years, and a number of minor revisions have been made since 2006. The HN programmes *per se* are therefore outside the scope of this review in the sense that they are not being considered for re-validation. However, for Horticulture and

Horticulture with Plantsmanship, they are part of the review by virtue of their status as Years 1 and 2 of the associated degrees.

All programme years are offered at SAC's Edinburgh campus, with HN Garden Design and Horticulture programmes also offered at Ayr. HNC/D Garden Design and HNC Horticulture ran at Aberdeen from 2006, but low numbers of students made that provision unsustainable. No new enrolments will be accepted at Aberdeen for 2011-12, although existing part-time students will complete their studies during that year.

The Horticulture with Plantsmanship programmes are delivered jointly by SAC Edinburgh and the Royal Botanic Garden Edinburgh (RBGE). A Memorandum of Agreement governs the relationship between the two institutions.

Validation of appropriate new awards is included as part of the review process. A degree in Garden Design is proposed, building on the existing HNC/HND. The panel's views on this are set out in a separate report.

There is no postgraduate provision in this subject group.

1.2   The Self-Evaluation Document (SED) was written by the Programme Leader, Dr Margaret Norton, with contributions by other members of the core team. Drafts had been distributed for comment and additional contributions from the rest of the teaching team. Students had not been involved in the production of the SED. Documents referred to in the SED were provided to the members of the panel on a memory stick.

A separate validation document gives details of the proposed degree in Garden Design.

1.3   The review/(re-)validation process extended over two days, essentially the first day to consider the review/re-validation of the existing programmes and the second day for the proposed Garden Design degree, although there was inevitably overlap between the discussions. During the course of the review the panel had five meetings with staff who had been part of the development team (the team) and students. Details are provided as Appendix 1. Inevitably, many topics were discussed at more than one meeting: the report is therefore structured by topic rather than as an account of each meeting separately.

1.4   The numbers of FTEs on each programme for the academic year 2010-11 are shown below:

Student numbers (FTEs) on each programme for academic year 2010-11

Programme	Total
Garden Design Year 1	28.5
Garden Design Year 2	3
Horticulture Year 1	30.5
Horticulture Year 2	16.5
Horticulture Year 3	0
Horticulture Year 4	1
Horticulture with Plantsmanship Year 1	16.5

Horticulture with Plantsmanship Year 2	16
Horticulture with Plantsmanship Year 3	10
Horticulture with Plantsmanship Year 4	9.5
Total	131.5

2. Overall aims

The programmes appeared to meet industry demands in that graduates readily found appropriate employment. The flexible entry and exit structure, with qualifications available at the end of each year, gave opportunities to students with a range of backgrounds and qualifications to study at a level and pace that suited them. However, it was difficult to establish from the figures presented in the SED whether there was a retention problem, given that the figures for Years 1 and 2, for example, included individuals who enrolled for the HNC/ HND and had no intention of progressing further. Staff and students who met the panel confirmed that few students left without achieving their intended qualification; those who did were usually mature students with a variety of commitments that compromised their ability to study effectively. On the positive side, it was not uncommon for students to progress and achieve qualifications beyond their original expectations. It would have been helpful if the team had presented the figures in the form of the flowcharts used in annual programme review, which allowed the achievements of individual students to be seen in relation to their initial enrolment status.

Enrolments on the separate programmes have been modest, although with consolidation of provision at Ayr and Edinburgh the collective cohorts for each year are more sustainable, helped by some sharing of modules across programmes. The obvious exceptions are Years 3 and 4 Horticulture, which have had only 3 and 2 students, respectively, over the past six years. Progression to Year 2 of the HND Garden Design has been poor, apparently because there is currently no degree provision. The panel therefore discussed with staff the difficulties of rejuvenating the Horticulture degree in the face of falling student rolls and the closure of similar programmes elsewhere.

In particular, there appeared to be a mis-match between an industry in which the majority of jobs were in the retail sector and a degree programme that focussed on plant knowledge. Staff acknowledged the importance of the retail sector and emphasised that the current curriculum was well suited to prepare graduates for retail careers. However, the horticulture industry was very broad, offering a range of jobs in the support industries and in horticultural crop production, for which the plant science emphasis was ideal. Market research presented in the SED confirmed that a wide range of careers was open to qualified individuals and that many businesses had difficulties recruiting suitable staff.

It was clear, however, that a marketing strategy was required that would encourage school leavers and other potential students to study horticulture. The panel **recommended** that market research to establish the demand for the Horticulture degree from industry should be used to inform and substantiate statements about the programme in publicity material, careers leaflets, careers talks etc. in such a way that potential students would see horticulture as an attractive career.

The panel further **recommended** that the team consider rationalising the

number of named degrees/streams in order to avoid small cohorts that are neither financially viable nor educationally sound; and at the same time, consider the feasibility of degree-only enrolments from Year 1. The latter recommendation was in the context of a cap on student numbers, recent indications across the programmes that more students were enrolling initially for the degrees and the benefits of moving out of HN provision that would result from the greater control over the syllabus and the assessment regime in Years 1 and 2.

3. Academic standards

3.1 Learning outcomes

The review panel noted that overall programme aims and outcomes had only recently been included in the students' programme handbooks and wondered whether their absence might have made it less easy for students to take a holistic view of the programme. This in turn might have been responsible for some of the issues raised in the SED, such as students questioning the relevance of some modules (eg *Business Management* and *Getting Started in Business*); for poor progression between years; and perhaps for questions about the balance between academic study and practical skills.

The SED noted that programme aims and outcomes are discussed with students at the start of their programme in relation to the competences and attributes that students were expected to attain. The team confirmed that it was important that students saw the bigger picture and explained that this was reinforced by discussions with students about their aspirations and potential careers, stimulated by industry visits, study tours etc. The 15 module curriculum in Years 1 and 2 exacerbated the tendency for students to think in terms of discrete modules, although the recently introduced Graded Units, which required students to integrate knowledge across the modules contributing to the broad aims of the HNC/HND awards, had proved beneficial.

3.2 Curriculum design and content

The SED listed the minor changes that had been made to Years 1 and 2 since 2006 in the form of additional optional modules in response to comments from staff, students and the external examiner. The changes proposed as a result of the current review, again drawing on comments of staff, students and the external examiner, but supplemented by the views of industry, recent graduates and national surveys and reports, are summarised below.

Horticulture and Horticulture with Plantsmanship
- Addition of *Experimental & Analytical Techniques* and *GIS & Remote Sensing* as optional modules in Years 3 and 4.
- Improve students' familiarity and competence with numerical techniques by embedding data handling in modules throughout the programmes, building on the recent addition of *Data Collection & Handling Methods* in Year 2 and proposals to move the existing Year 3 module *Research Skills & Data Management*, from semester 2 to semester 1.
- Address dissatisfaction with business modules in Years 1 and 2, possibly by choosing different modules, by incorporating business matters in context in other modules or by more involvement of horticulture lecturers in the existing modules. These are matters for agreement with SQA and the other colleges that have an interest in the HNC/HND Horticulture.

- There was a tendency for students' views to be polarised between a wish for more science or for more management. The existing core and optional modules allow both preferences to be accommodated.

Garden Design
The curriculum is considered satisfactory as it stands, but a proposal has been put to SQA to have a common Garden Design/Horticulture Year 1. This would give greater flexibility to students who were uncertain about where their interests lay and provide more science for Garden Design students.

The panel was satisfied with the curricula. Mapping how data handling exercises would be embedded in modules in order to help fulfil the commitment to improve students' numerical skills would be helpful to both students and staff.

3.3 Assessment

3.3.1 Assessment management

The SED outlined the range of assessment methods used and the students who met the panel confirmed the value of this variety. In general, the assessment regime was considered fair. However, the students felt that more should be done to avoid bunching of assessments by better co-ordination across modules. This point was made generally, but there was a specific complaint about poor communication between RBGE and SAC, which created particular difficulties when examinations coincided with hand in dates for coursework, or when coursework needed to be handed in at RBGE on days when the students did not otherwise need to be there.

The team acknowledged that it would be beneficial to have a co-ordinated assessment calendar for both SAC and RBGE, in order to help spread assessments more evenly in all years. Part of the difficulty in Years 1 and 2 was the need to assess 15 modules: with second attempts needing to be built into the timetable, there were many assessment events. In some cases, it had proved possible to combine assessments for more than one module, and the panel commended this approach.

It was important that students were given the opportunity to plan their work effectively and that the timing of assessments did not adversely affect their chances of doing well. The panel therefore made the demonstration of how the team would co-ordinate the timing of assessment in order to avoid bunching of assessments a **condition** of re-validation. This was particularly important for Horticulture with Plantsmanship students who might have additional problems caused by having to be at RBGE and SAC on the same day. The team should also ask Module Leaders to seek ways of combining assessments within and across modules in order to reduce the number of assessment events.

The student survey conducted as part of the review indicated clear dissatisfaction with the volume of work and assessment of the Horticulture with Plantsmanship programme, particularly in Year 2, and this was confirmed by the students in person. There was also a lack of clarity sometimes over what was required in some of the RBGE assessments. The team recognised that RBGE staff had high expectations of the students and that the resultant heavy workload caused problems for the students and sometimes impinged detrimentally on other parts of the programme. Some students had financial

difficulties because they had no time for part-time paid work. Some of the workload was the result of students having the opportunity to undertake the RBGE Diploma alongside the Year 2 HND work. The Diploma was a valuable additional qualification but there was not a clear distinction between work for the Diploma and work for the HND.

The panel acknowledged the educational value of merging the work in this way, but it was not clear whether this approach meant that students were unable to opt out of the Diploma. While all students would no doubt wish to complete the year successfully with both the HND and the Diploma, it was important that those whose time was limited by other commitments had the information needed in order to make an informed choice about where to concentrate their efforts. The panel **strongly recommended** that the team liaise with colleagues at the RBGE in order to reduce the amount of work expected of students on the Horticulture with Plantsmanship programme. This should be done in the context of the Scottish Credit & Qualifications Framework (SCQF), which specifies that 1 SCQF credit equates with 10 notional learning hours. The content of the RBGE Diploma in terms of its requirements for tuition and assessment should be clarified so that students have a clear basis on which to decide whether to undertake the Diploma.

3.3.2   Assessment feedback

The SED noted that students had been critical of the feedback on their assessed work, and students who met the panel confirmed that the provision of feedback was erratic, varying among staff and frequently later than the maximum four weeks after the examination or submission date. In some cases, feedback on coursework had not been available before the corresponding final examination.

The team recognised that this was a problem and explained that feedback had been the subject of discussions at core team meetings throughout the year. As a result, staff had been encouraged in the current academic year to include feedback sessions within normal class times; to use standard feedback sheets; and to run additional feedback sessions. In design modules, the nature of the assessment process meant that feedback was largely continuous. The new management information system, UnitE, would allow students to see their results for coursework and examinations as they became available and this was seen as a big improvement. The VLE, Moodle, was increasingly being used for the electronic submission of assessments and included the facility for providing online feedback. This would also facilitate cross-campus moderation of marking and thereby reduce the overall time for completion of the marking process and increase the timeliness of feedback.

Noting that students sometimes did not attend feedback sessions or collect work marked towards the end of term, the panel wondered whether this could be indicative of students not being fully engaged with the learning process in a self-reflective way, or of a lack of awareness of the programme as a whole. Formative assessment might help stimulate self-reflection and an awareness of the bigger picture. The team explained that formative assessment was a feature of several modules, such as the *Advanced Case Study* and others in which formative assessment of student presentations was followed by summative assessment of a written submission.

The panel agreed that improved feedback should be a **condition** of re-

validation. The team should demonstrate how feedback to students would be provided more effectively and consistently across all modules as a way of increasing the educational value of assessments. This would involve adhering to the agreed maximum time between an assessment and its feedback and using standard forms for recording the feedback. Moodle might also be used as a way of providing feedback in a standardised format, ideally as part of a system of submitting work electronically. The team should gather information from Module Leaders in order to quantify the extent to which formative assessment was used in the programmes and act accordingly if the amount of formative assessment was considered inadequate. The Programme Handbook should include an explanation of the value of formative assessment and how it would be built into the learning and teaching approaches of different modules.

3.4 Student achievement

Students on the BSc/BSc(Hons) Horticulture with Plantsmanship have graduated with good degrees and have either secured appropriate jobs or progressed to postgraduate studies. Two students graduated with the Horticulture degree in 2010 (the only ones since 2005) and both gained appropriate jobs.

Given the HN/degree structure of the programmes, students also graduate with HNC and HND awards and for many this was always their intention (see 2). However, the programmes attract a high proportion of mature students, many of whom have other commitments and in some cases health problems, and as a result some leave without completing a qualification.

4. Quality of learning opportunities

4.1 Learning and teaching

The SED described the wide range of learning and teaching methods employed, the use of staff from all SAC Divisions for teaching and project supervision, and the good links with industry, which result in work placements and student visits. The surveys of students conducted as part of the review indicated general satisfaction with learning and teaching and this was confirmed by the students who met the panel. Horticulture with Plantsmanship students' dissatisfaction with their workload has been noted in 3.3.1.

Moodle was successfully introduced as the VLE (replacing Blackboard) in 2010/11. The SED noted that more modules now included material on Moodle and that it was beginning to be used as a means by which students could submit work electronically, as noted above (3.3.2). The team referred to its use for group work, online quizzes and other formative assessments, as well as its use as a repository for lecture notes and for past examination papers. They recognised, however, that there was still variation among staff in the extent to which material to support learning was available on Moodle. The students confirmed this, although they agreed that the change form Blackboard to Moodle had resulted in improvements.

The panel recognised that good work was being done with the VLE, but agreed that steps should be taken to ensure parity of learning experience across all modules. The panel therefore **strongly recommended** that the team review the effectiveness with which Moodle was used to support the learning process for individual modules, working with the Flexible Learning Manager to ensure

that all Module Leaders adhere to at least the minimum standard for the provision of information on Moodle.

4.2   Student support

The panel was satisfied, from information in the SED and supporting documents and from discussions with the students, that academic and pastoral support effectively met the needs of the students. One of the beneficial features of SAC which the students emphasised was the good working relationships they had with staff and individual attention when required. However, in the discussions with students it became clear that the needs of one student at least, who had declared a disability, had not been made known to all the relevant staff. The panel reminded the team that they must ensure that all appropriate staff are made aware of any special educational needs of individual students.

4.3   Learning resources

The panel was satisfied that general resources for learning were good and this was confirmed by the students. The SED concentrated on the facilities for practical work. At Aberdeen, the arrangements for maintaining the glasshouse and garden area had worked well. Latterly however, declining numbers of students made it difficult to sustain and this contributed to the decision to withdraw from Horticulture and Garden Design teaching at Aberdeen. At Ayr, the horticultural unit and the Gardens provided good facilities, which would be retained as a practical resource after the move from the Auchincruive campus to the new campus in Ayr; some upgrading has been proposed. At Edinburgh, the new glasshouse had greatly enhanced the facilities available.

The team has identified the need for dedicated controlled environment facilities and access to an engineering workshop at Edinburgh. The students supported the idea of improvements in these areas, and pointed out also that it would be helpful if IT access could be speeded up. Historic sharing of some learning facilities between SAC and the University of Edinburgh meant that students on degree programmes validated by the University of Edinburgh had access to the University's e-journals. However, students on programmes validated by the University of Glasgow did not have access to Glasgow's e-journals. The panel suggested that the team might ascertain whether this represented a real problem by investigating the range of electronic journals available to students on the Horticulture group of programmes and liaising with the SAC Library with a view to making good any identified gaps in provision.

5.   The maintenance of academic standards

The SED noted that SAC's quality assurance system included a common academic framework comprising policies and procedures that operated across all SAC programmes and campuses. The assessment system followed the University of Glasgow's Code of Assessment. External reference points, such as subject benchmark statements and SCQF level descriptors informed curriculum design. The external examiner and SQA external verifiers had reported their satisfaction with the academic standards of the programmes.

6.   Assuring and enhancing the quality of the students' learning experience

The panel was satisfied that students enjoyed a rewarding learning experience.

The students who met the panel were all glad that they had decided to study at SAC, and highlighted the benefits of a supportive environment in which they had good access to staff and felt part of a learning community. This environment, and the learning and teaching methods, had helped them develop maturity and confidence. Of particular note were: the opportunity to undertake an honours project tailored to their individual interests; the breadth of topics covered, which "opened new doors"; and an inspiring approach to teaching science.

The students' experience was clearly enhanced by activities designed to support the curriculum, such as study tours within the UK or mainland Europe; additional training in practical skills; encouragement to attend meetings of external horticultural and botanical societies; regular success in national competitions, including those for the design and construction of show gardens. Students at both Ayr and Edinburgh had set up their own horticultural societies.

7. Conclusions, conditions and recommendations

7.1 The panel agreed to recommend to the Learning Division Management Team of SAC and the Academic Standards Committee of the University of Glasgow that the BSc/BSc(Hons) Horticulture and the BSc/BSc(Hons) Horticulture with Plantsmanship should be re-validated as awards of the University of Glasgow for six years from session 2011/12. The panel made a number of conditions and recommendations, which are noted in paragraphs 7.3 and 7.4.

7.2 The panel recognised that the programmes had significant strengths, in particular:
- the breadth of topics covered in the curricula;
- the complementary expertise of SAC and RBGE;
- the supportive learning environment;
- an inspiring and accessible approach to science teaching.

7.3 However, the re-validation Panel had concerns about some aspects of the proposal and made the following **conditions:**

7.3.1 It was important that students were given the opportunity to plan their work effectively and that the timing of assessments did not adversely affect their chances of doing well. The panel therefore made the demonstration of how the team would co-ordinate the timing of assessment in order to avoid bunching of assessments a **condition** of re-validation. This was particularly important for Horticulture with Plantsmanship students who might have additional problems caused by having to be at RBGE and SAC on the same day. The team should also ask Module Leaders to seek ways of combining assessments within and across modules in order to reduce the number of assessment events [3.3.1].

7.3.2 The panel agreed that improved feedback should be a **condition** of re-validation. The team should demonstrate how feedback to students would be provided more effectively and consistently across all modules as a way of increasing the educational value of assessments. This would involve adhering to the agreed maximum time between an assessment and its feedback and using standard forms for recording the feedback. Moodle might also be used as a way of providing feedback in a standardised format, ideally as part of a system of submitting work electronically. The team should gather information from Module Leaders in order to quantify the extent to which formative assessment was used in the programmes and act accordingly if the amount of

formative assessment was considered inadequate. The Programme Handbook should include an explanation of the value of formative assessment and how it would be built into the learning and teaching approaches of different modules [3.3.2].

7.4   In addition, the panel made the following advisory **recommendations**:

7.4.1   The panel **strongly recommended** that the team liaise with colleagues at the RBGE in order to reduce the amount of work expected of students on the Horticulture with Plantsmanship programme. This should be done in the context of the SCQF, which specifies that 1 SCQF credit equates with 10 notional learning hours. The content of the RBGE Diploma in terms of its requirements for tuition and assessment should be clarified so that students have a clear basis on which to decide whether to undertake the Diploma [3.3.1].

7.4.2   The panel **strongly recommended** that the team review the effectiveness with which the VLE, Moodle, was used to support the learning process for individual modules, working with the Flexible Learning Manager to ensure that all Module Leaders adhere to at least the minimum standard for the provision of information on Moodle [4.1].

7.4.3   The panel **recommended** that market research to establish the demand for the Horticulture degree from industry should be used to inform and substantiate statements about the programme in publicity material, careers leaflets, careers talks etc. in such a way that potential students would see horticulture as an attractive career [2].

7.4.4   The panel further **recommended** that the team consider rationalising the number of named degrees/streams in order to avoid small cohorts that are neither financially viable nor educationally sound; and at the same time, consider the feasibility of degree-only enrolments from Year 1. The latter recommendation was in the context of a cap on student numbers, recent indications across the programmes that more students were enrolling initially for the degrees and the benefits of greater control over the syllabus and the assessment regime in Years 1 and 2 that would result from moving out of HN provision [2].

Finally, the panel made a number of **observations**, noting that implementation of the re-validated programmes would benefit from consideration of the following:
- ensuring that all appropriate staff are aware of any special educational needs of individual students;
- ascertaining whether the lack of access to the University of Glasgow's e-journals represented a real problem by investigating the range of electronic journals available to students on the Horticulture group of programmes and liaising with the SAC Library with a view to making good any identified gaps in provision;
- mapping how data handling exercises would be embedded in modules in order to help fulfil the commitment to improve students' numerical skills.