

**University College Cork
National University of Ireland, Cork**

Quality Improvement/Quality Assurance

Peer Review Group Report

**BSc Degree in Environmental Science
and
BSc Degree in Environmental Studies**

Academic Year 2005/6

29th March 2006

Members of the Peer Review Group:

Professor Albert Flynn, Department of Food & Nutritional Sciences, UCC (Chair)

Dr. Cora O'Neill, Department of Biochemistry, UCC

Professor Michael Guiry, Martin Ryan Science Institute, NUI Galway

Professor Tim Jickells, School of Environmental Sciences, University of East Anglia, UK

Professor Elizabeth Hounsell, School of Chemical & Biological Sciences, Birkbeck,
University of London, UK

Timetable of the site visit

The timetable of the site visit is attached as Appendix A.

PEER REVIEW**Methodology**

The Self Assessment Report which was prepared by the Co-ordinating Committee was reviewed by the Peer Review Group members prior to the site visit. The site visit was conducted according to the timetable outlined in Appendix A. The Peer Review Group considered all aspects of the review as a group. All members of the Group conducted the interviews. Additional information was provided to the Peer Review Group, including External Examiners' reports and student numbers. The report was drafted in outline before the exit presentation and was completed using electronic communication. All sections were approved by all members of the Peer Review Group. The exit presentation was made by the Chairperson.

Overall analysis**Self-Assessment Report**

The Self-Assessment Report presented a detailed analysis of the two programmes and identified a number of issues, which are important to their future development. The Co-ordinating Committee carried out wide consultation with the opportunity for input from

staff, students and others. Additional information was provided during the site visit, including External Examiner's reports for (2003-2004), and finances. The information available on the departments contributing to the programmes was limited; however, this reflects the multidisciplinary nature of the programmes and the fact that no single department has primary responsibility for either programme.

SWOT analysis

The Peer Review Group was in general agreement with the following points made in the SWOT analysis presented in the Self Assessment Report.

BSc Environmental Science

Strengths – Perceived strengths include alignment of the degree programme with strategic priorities for UCC (environmental science, interdisciplinary programmes), multi-disciplinarity and broad subject base, thematic streams, strong science focus, good progression of students, committed and talented academic and administrative staff.

Weaknesses – Lack of identity of the environmental science degree within existing University departmental structures, lack of a student home base for the programme, divided loyalties of academic staff between this programme and programmes in their own primary disciplines, mode of entry, student difficulties in the first year, internal competition for students, lack of depth in individual disciplines, dependence on 'off the shelf' modules shared with other programmes, difficulty in co-ordinating a wide range of subject areas, over-reliance on Degree director/ coordinator, weak communication with students (e.g. the difficulty of navigating the Courses web site from a good front page to staff and course descriptions), inadequate resources, including inadequate administrative support, lack of senior academic leadership.

Opportunities/threats – Environmental Science is a growth area and provides significant opportunities within the University and nationally. Factors which could significantly influence the future of the programme include: university restructuring, institutional support, internal competition for students, commitment of academic departments to the

degree, ability to improve associated research base/relationship to the Environmental Research Institute (including availability of ERI resources for Environmental Science teaching), future strategic planning for the degree including course development, fluctuating student demand, competition with other third level institutes, use of new teaching technologies, advancing environmental technologies offering good employment prospects.

BSc Environmental Studies

Strengths - Perceived strengths include highly motivated students, multi-disciplinarity with a broad subject base, alignment with strategic priorities for UCC (environmental studies, life-long learning, interdisciplinary programmes), good progression of students, excellent staff quality and commitment, external input to the course from local industries and alumni, highly supportive students.

Weaknesses – lack of identity of environmental studies within existing University structures, lack of a student home base for the programme, schedule inflexible for student attendance, lack of depth in individual disciplines, heavy dependence on voluntary commitment of academic staff, inadequate resources (including inadequate administrative support) and lack of support for the needs of adult learners (including weak communication with students and insufficient attention to the adoption of new learning and support methods), lack of senior academic leadership, administrative difficulties with student registration.

Opportunities/threats – factors which could significantly influence the future of the programme include: university restructuring, institutional policy on continuing education and evening teaching, institutional support, internal competition for students, commitment of academic departments, relationship to the Environmental Research Institute, fluctuating student demand, future strategic planning for the degree, new teaching technologies, advancing environmental technologies, input from employers and alumni, mature student quotas.

Benchmarking

Both the BSc Environmental Science and the BSc Environmental Studies Degree programmes were compared with similar programmes in the UK. This highlighted the relative under-resourcing of the UCC programmes. However, the Peer Review Group knew of the difficulties in the UK of running such types of interdisciplinary degrees, although acknowledging the rewards of such programmes.

FINDINGS OF THE PEER REVIEW GROUP

BSc Environmental Science

Programme details

This is a high quality four-year, multidisciplinary programme with a broad subject base, which attracts students of a good academic standard. It is aligned with strategic priorities for UCC (environmental science, interdisciplinary programmes). It has a strong science focus with thematic streams in the final year. Progression of students is good. It is still a new programme (first entry in 2001) and has established a relatively stable student intake and a high level of student satisfaction.

The Peer Review Group considers that the programme is extremely viable and has the potential for further development.

Programme organisation and planning

The programme is run by a Board of Studies with representatives of a number of academic departments, including: Department of Zoology, Ecology and Plant Science (ZEPS), Geology, Chemistry, Geography and Maths, but it is not aligned with any individual academic department. The programme is well organised despite the complexity of such multidisciplinary degrees and the lack of a supportive environment generally available to programmes anchored in academic departments.

The programme is coordinated by a Director/Co-ordinator and a part-time Executive Assistant (both shared with the BSc Environmental Studies). The very high level of dedication and commitment of the programme Director/Co-ordinator is widely recognised and to be highly commended, as is that of the Executive Assistant. However, these arrangements provide inadequate resources in terms of co-ordination/administration, and the ability to plan strategically for the future. Furthermore, the Executive Assistant is located at some distance from the programme Director/Co-ordinator. The current office space occupied by the Executive Assistant is unsatisfactory in terms of its location, its state of decoration and in some aspects of health and safety.

The programme is heavily dependent on 'off the shelf' modules shared with other programmes. This leads to ongoing timetabling difficulties and inhibits course development to incorporate emerging areas and topics relevant to local issues.

There is a lack of identity of environmental science as an area of study within the University; this is in part related to a lack of senior academic leadership dedicated to environmental science. The staff contributing to the degree are dedicated and enthusiastic. However, academic staff and academic departments have divided loyalties between this programme and programmes in their own discipline which are generally considered of higher priority.

The current shared entry (CK404) with other programmes inhibits the development of a more focused curriculum in the first year (i.e. focussed on the specific expertise and needs of environmental science students for the course in 2-4th years) and leads to internal competition for students.

Teaching and learning

The students are well motivated and are generally satisfied with the quality of the programme. The 2003-04 External Examiner's report seen by the Peer Review Group was very positive. Staff who teach on the programme are research active (although, for some,

heavy workloads in teaching and administration restricts involvement in research). There appear to be good career opportunities for graduates.

Students regard the first year as very challenging but recognise the importance of a strong science foundation for the degree programme. Generally students in the programme enter first year with a clear motivation to pursue the Environmental Science Degree and therefore students would wish to see a greater focus on environmental science in the first year. Students welcome the availability of thematic streams in the final year.

The eligibility of graduates from this programme for postgraduate research studies within cognate departments in UCC is still unclear and may be variable for different disciplines. Although there is as yet no relationship to the newly established Environmental Research Institute there is potential to interact through final year research projects.

The Peer Review Group noted the need and value for continuing curriculum review in minuted meetings and a process to respond to feedback.

BSc Environmental Studies

Programme details

This is a high quality, multidisciplinary programme with a broad subject base, which attracts students of a good academic standard. It is aligned with strategic priorities for UCC (environmental studies, interdisciplinary programmes, life-long learning). It is offered in alternate years as an evening part-time programme over four years for the BSc Ordinary degree, with the option of one extra year to obtain an Honours degree. Progression of students is good. It is still a relatively new programme (first entry in 1997) and has established a stable student intake. The programme provides opportunities for strong interaction with local industry and agencies.

The Peer Review Group considers that the programme is extremely viable and has the potential for further development. There is considerable goodwill towards the programme

from local industry and agencies and programme graduates and alumni, with a willingness to contribute to programme delivery and curriculum development.

Programme organisation and planning

The programme is run by a Board of Studies with representatives of a number of academic departments but it is not completely aligned with any individual academic department. The programme is well organised despite the complexity of such multidisciplinary evening degrees and the lack of a supportive environment generally available to programmes anchored in academic departments.

It has a programme Director/Co-ordinator and a (part-time) Executive Assistant (both shared with the BSc Environmental Science). The very high level of dedication and commitment of the programme Director/Co-ordinator is widely recognised, as is that of the Executive Assistant. However, these arrangements provide inadequate resources to carry out the considerable administrative workload associated with delivery of the programme. Furthermore, the Executive Assistant is located at some distance from the programme Director/Co-ordinator. The current office space occupied by the Executive Assistant is unsatisfactory, for reasons pointed out earlier.

The considerable contact time required for students (3 evenings per week plus field trips) places a heavy burden on adult learners. While this contact is highly valued by students the Peer Review Group considers that it may reduce the attractiveness of the programme to all but the most highly motivated students and thus may limit uptake. Thus there may be an opportunity to find other student cohorts who would appreciate a more distance learning approach, including overseas students who would perceive Ireland as experienced at 'green' issues. This might take the form of a distant learning based course entirely or offer a way to reduce the contact time on the existing programme for instance from 3 to 2 nights per week. The success of a distance learning degree in Earth Sciences at Birkbeck was noted.

There is a lack of identity of environmental science as an area of study within the

University; this is in part related to a lack of senior academic leadership dedicated to environmental science.

Academic staff and academic departments have divided loyalties between this programme and (day) programmes in their own discipline, which are generally considered of higher priority. The perception of academic departments is that the cost-benefit of contributing to the programme, relative to other (day) programmes, is unfavourable to them.

Generally, evening teaching is not recognised as part of the normal workload of academic staff. Neither is the remuneration attractive. Consequently, the programme draws heavily on the goodwill of a limited number of academic staff complemented by contribution from part-time teaching staff. The continued commitment of academic staff to evening teaching is critical to the sustainability of the programme. The Peer Review Group was made aware that there is lack of consistency across the university on recognition and remuneration of evening teaching and that there are good examples of best practice within the institution that should be adopted in relation to this course.

Teaching and learning

The students are very highly motivated and are generally satisfied with the quality of the programme. The 2003-04 External Examiner's report was positive, but there was no evidence that there had been any resolution of problems about commitment of academic staff and departmental resources. However, the academic staff who teach on the programme remain highly dedicated. Most students undertake the programme in order to enhance their career development and there is evidence that it has been successful in this.

There is a heavy reliance on traditional approaches to course delivery, with limited use of *e-learning*. There is generally a lack of recognition of prior learning. There is insufficient support for the needs of adult learners.

Although there is as yet no relationship to the newly established Environmental Research Institute there may be potential to develop this.

The Peer Review Group noted the need for and value of continuing curriculum review.

Both Degree Programmes

External relations

The BSc Environmental Studies, in particular, provides for extensive external contacts with industry and agencies in the region. This represents a valuable resource to the University.

Support services

The Peer Review Group visited the library and was impressed with the services provided to the programmes, including flexibility of access and extensive electronic resources, as well as the availability of programmes on information literacy. Evening students in particular should be encouraged to avail more of these services.

Staff development

The Self-Assessment Report was a true critique of the status of the Programmes. Exploration of its themes showed that the Director/Co-ordinator is seriously overburdened by teaching and administration with little opportunity for development of her research career. The Executive Assistant also has a considerable workload within the limited hours of the part-time post, which limits access to training for career development.

Programme Co-ordinating Committee and Methodology Employed in the preparation of the Self Assessment Report.

The Committee is to be commended on the detailed analysis of the two programmes presented in the Self-Assessment Report. However, the Peer Review Group would have wished the report to articulate a clearer vision for the future development of the two programmes.

RECOMMENDATIONS FOR IMPROVEMENT

1. Both programmes should be integrated within a supportive environment in the context of University restructuring.
2. There is a need for strong academic leadership at a senior level to lead academic programmes in environmental sciences.
3. Additional staff resources are required to support the co-ordination and administration of the programmes. The unsatisfactory working conditions and the limited opportunities for career development of the programme Director/Co-ordinator and Executive Assistant should be specifically and urgently addressed.
4. A suitable programme office/student resource area which would allow co-location of administrative support and co-ordination for the programmes should be provided.
5. There is an immediate (i.e. before the start of the next academic year) need for a strategic plan for the development of both programmes which addresses the above four recommendations as well as a number of other issues:
 - how to increase student intake (both programmes)
 - to explore the possibility of a separate entry stream for the BSc Environmental Science)
 - to explore the wider use of *e*-learning in the BSc Environment Studies (while maintaining a reasonable level of staff-student contact) and to explore sources of funding available for such initiatives
 - to consider improved support for the needs of adult learners (BSc Environment Studies)
 - to consider awarding credit for prior learning in the BSc Environment Studies
 - ongoing curriculum development and review, including external input (both programmes)

- to explore outlets for graduates of the BSc Environmental Science, including postgraduate research in cognate areas, including the Environmental Research Institute
 - to develop further interaction with local industry/agencies and programme graduates (both programmes)
 - to develop interactions with the Environmental Research Institute (e.g. through undergraduate research projects for the BSc Environmental Science)
6. The University should address the issue of recognition and remuneration of evening teaching by academic staff with a view to identifying and implementing best practice in this area.

Timetable for conduct of Peer Review Visit

BSc Degree in Environmental Sciences

BSc Degree in Environmental Studies

Monday 16th January 2006

- 17.30 Meeting of members of the Peer Review Group
Briefing by Director of Quality Promotion Unit, Dr. N. Ryan.
Group agrees final work schedule and assignment of tasks for the following 2 days.
Views are exchanged and areas to be clarified or explored are identified.
- 19.30 Dinner for members of the Peer Review Group, Director of Board of Studies and Co-ordinating Committee.

Tuesday 17th January 2006

- 08.30 Convening of Peer Review Group in Tower Room 1, North Wing, Main Quad, UCC

Consideration of Self-Assessment Report

- 08.45 Dr. Emer Rogan, Department of Zoology, Ecology & Plant Science
- 09.00 Dr. Debbie Chapman, Director of Board of Studies
- 09.30 Meeting with members of the Board of Studies for both programmes

Environmental Science
Management Board

Environmental Studies Management
Board

Dr. Alistair Allen, *Geology*
Dr. Debbie Chapman, *Zoology,
Ecology & Plant Science*
Dr. John Wenger, *Chemistry*
Dr. Robert Devoy, *Geography*
Professor John Sodeau, *Chemistry*
Dr. Gareth Thomas, *School of Mathematics,
Applied Mathematics & Statistics*
Dr. Andrew Wheeler, *Geology*
Dr. Pat Whelan, *Zoology, Ecology
& Plant Science*

Dr. Alistair Allen, *Geology*
Dr. Debbie Chapman, *Zoology,
Ecology & Plant Science*
Dr. John Wenger, *Chemistry*
Dr. Fiona Dukelow, *Applied Social
Studies*
Ms. Aveen Henry, *CPPU*
Professor Peter Jones, *Zoology,
Ecology & Plant Science*
Dr. Tom Kelly, *Zoology, Ecology &
Plant Science*

- 10.45 Time allowed for private meetings of members of the Peer Review Group with members of staff.

- 10.45 Dr. Alistair Allen (*Geology & Chair of Co-ordinating Committee*)
 11.00 Prof. Patrick O’Flanagan (*Geography*)
 11.15
 11.30 Prof. Peter Jones (*Zoology, Ecology & Plant Science & Environ. Studies Board*)
 11.45 Prof. John Sodeau (*Chemistry & Environ Science Board*)
 12.00 Prof. Philip O’Kane (*Civil & Environmental Engineering*)
 12.15 Dr. Andy Wheeler (*Geology & Environ Science Board*)
 12.30 Dr. John Wenger (*Chemistry, Environ Studies Board & Co-ordinating Committee*)
 12.45 Philomena Fogarty (*Executive Assistant Environ Science & Environ Studies & Co-ordinating Committee*)
- 13.00 Working private lunch for members of Peer Review Group
- 14.00 Visit to core facilities escorted by Dr. D. Chapman
- 15.00 Representatives of students on BSc Environmental Sciences Degree Programme (Day)
 Paul Kiely, BSc II
 Eric Kavanagh, BSc II
 Ben Huskinson, BSc III
 Donal O’Keeffe, BSc III
 Elma Lahive, BSc IV
 Grace Cott, BSc IV
- 15.30 Meetings with module co-ordinators and representatives of teaching staff
 Professor Brian Jennings, *Chemistry*
 Dr. Andy Ruth, *Physics*
 Mr. Nick Chisholm, *Food Business & Development*
 Dr. Fiona Dukelow, *Applied Social Studies*
 Ms. Aveen Henry, *CPPU*
- 16.00 Ms. Carmel Cotter, Finance Office
- 16.15 Professor Patrick Fitzpatrick, Acting Head, College of Science, Engineering & Food Science / Acting Dean of Faculty of Science
- 17.00 Representatives of recent graduates, employers and other stakeholders as appropriate
 Mr. Killian Condon, *Pfizers and BSc (Environmental Science)*
 Mr. Donal Cronin, *Visiting Lecturer (Department of Environment)*
 Ms. Katherine Cronin, *BSc (Environmental Science)*
 Mr. Paul Dansie *BSc Hons (Environmental Studies)*
 Mr. Michael O'Brien, *Senior Engineer, Environment, Cork City Council*
 Mr. Norman Palliser, *BSc Ord (Environmental Studies)*
 Mr. Dick Ryan, *BSc Hons (Environmental Studies)*

Mr. Brian Sheil, *BSc Hons (Environmental Studies)*
Mr. Aidan Stafford, *BSc Hons (Environmental Studies), Director of CTO Environmental*
Mr. Peter Webster, *Regional Chemist, EPA Lab*

18.00 Representatives of students on BSc Environmental Studies Degree Programme (Night)

Alex Grassick, BSc I
Thomas Healy, BSc I
Emer Cooney, BSc I
Cecilia Healy, BSc III
Niamh O'Carroll, BSc III
Robert Slowey, BSc III
John O'Meara, BSc V

Brian Coffey, BSc IV – Science (day)
Matt Harpur, BSc IV – Science (day)

19.00 Meeting of Peer Review Group to identify remaining aspects to be clarified and to finalise tasks for the following day followed by a working private dinner for members for the Peer Review Group.

Wednesday 18th January 2006

08.30 Convening of Peer Review Group in Tower Room 1, North Wing, Main Quad, UCC

09.00 Professor Paul Giller, Registrar & Vice-President for Academic Affairs

09.30 Visit to Boole Library, meeting with Ms. Margot Conrick, Head of Information Services and Mr. Richard Bradfield, Science Librarian

10.30 Heads of Departments contributing Modules to either/and the Degree Programmes

Professor Ken Higgs, Head, Department of Geology
Dr. James Grannell, Head, School of Mathematics, Applied Mathematics & Statistics
Professor Anita Maguire, Head, Department of Chemistry
Professor Patrick O'Flanagan, Head, Department of Geography
Professor Philip O'Kane, Head, Department of Civil & Environmental Engineering
Professor Gregory Provan, Head, Department of Computer Science
Professor Peter Woodman, Head, Department of Archaeology

11.00 Consideration of issues by PRG

11.30 Dr. Alan Dobson, Director, Environmental Research Institute

12.30 Dr. Debbie Chapman, Director of Board of Studies

13.00 Working private lunch for members of the Peer Review Group

14.00 Preparation of first draft of final report

16.30 Exit presentation made to all staff involved in the Degree Programmes by the Chair of the

Peer Review Group, summarising the principal findings of the Peer Review Group.

The presentation was not for discussion at this time.

17.00 Finalisation of arrangements for speedy completion and submission of final report.

18.00 Externs depart