Dublin City University

Quality Assurance / Quality Improvement

2008-2010

Quality Improvement Plan (QuIP)
of the
Faculty of Engineering and Computing

21 May 2010

Contents

This Quality Improvement Plan was agreed at a meeting on 21 May 2010. The meeting was attended by the following participants:

University Representatives	Prof. Richard O'Kennedy, VPLI
	Prof. Eugene Kennedy, VPR
Faculty	Prof. Jim Dowling, Dean
	Dr. Noel Murphy, Head of School, EEng
	Dr. Geoff Hamilton, Computing
	Dr. Dermot Brabzon, MEng
	Dr. Tamas Szecsi, MEng
Peer Group	Dr. Christian Horn, External Peer
	Dr. Anne Morrissey, Rapporteur
Director of Quality	Dr. Heinz Lechleiter (chairing)

1. INTRODUCTION

1.1   Background and Context

As part of the University's Quality Review process, the Faculty of Engineering and Computing undertook a comprehensive self-assessment over the period October 2008 to August 2009. In September 2009 the Faculty's Self-Assessment Report was completed and submitted to the Quality Promotions Director. The Quality Review of the Faculty followed when this report was presented to the appointed panel of peer assessors, the Peer Review Group (PRG), who then visited the Faculty in September 2009 to discuss the report and explore its content and the operations of the Faculty in greater detail by meeting at length with all the Faculty's stakeholders. The PRG then submitted its report to the University.

1.2   Faculty of Engineering and Computing Quality Improvement Committee

The final PRG Report was sent to the Dean of the Faculty (Mr Jim Dowling) on 24th November 2009. The report was discussed at school and faculty level and each school formulated its responses to the recommendations and its inputs to the Faculty Quality Improvement Plan (QuIP). The Dean collated all the responses and inputs and produced a draft QuIP. The Dean, together with the Heads of the three constituent schools, finalised the QuIP.

The process was informed by

- Recommendations of the PRG
- SWOT analysis within, and recommendations that appear throughout, the Faculty's Self-Assessment Report (SAR)

and these were prioritised using the following criteria:

- PRG priorities
- Budget constraints

1.3   Faculty of Engineering and Computing Quality Improvement Plan

The PRG report expressed the group's positive view of the Faculty Self-Assessment Report and the cooperation it received during its visit:

- "*The Self-Assessment Report (SAR) of the Faculty of Engineering and Computing was comprehensive and yet reasonably concise. It provided a clear view of how the faculty and the constituent schools had developed and sought to improve quality since the previous round of school-level quality reviews.*

- *The process of self-assessment appears to have been conducted effectively. Schools established quality review co-ordinating committees that took responsibility for drafting the relevant sections of the SAR and organising the schools' 'away days'.*
- *The PRG found there was little evidence in the report of collective reflection by the faculty. This process appeared to have been very largely devolved to the schools where the PRG found that the self-assessment reports demonstrated a good level of self-reflection and of openness. There were no major surprises for the PRG during the visit as the SAR had covered almost all that needed to be covered. The one exception, relating to the morale of staff in the School of*

Computing, took up a large amount of the PRG's reflection and discussion time; earlier indication of the issues might have saved on this effort."

Having considered the PRG Report and, in particular, the set of recommendations therein, the Faculty of Engineering and Computing, (in particular, the constituent schools) have produced this joint Quality Improvement Plan. Essentially it contains the Faculty's responses to the PRG's recommendations and the articulation of the joint short-term (1 year) and medium-term (5 year) plans.

2. RESPONSE TO RECOMMENDATIONS IN THE PEER REVIEW GROUP REPORT

Recommendations for, and Responses to, Quality Improvement

The following table lists all the recommendations that feature in the Peer Review Group's report, numbered as in the report.

Recommendations concerning issues that also featured in the Faculty Self-Assessment Report are flagged by placing an asterisk beside the number of the recommendation.

Also shown in the table are the responses to the recommendations, and the timeline for effecting the response (1 year, 5 year or ongoing).

Each of the original recommendations was categorised with:

1. **An indication of priority**

   - P1: A recommendation that was deemed important and required urgent action.

   - P2: A recommendation deemed important, but could (or perhaps had to) be addressed on a more extended timescale.

   - P3: A recommendation that merited serious consideration but was not considered to be critical to the quality of the ongoing activities in the faculty.

2. **An indication of the level(s)** of the University where action was required as follows:

   - S: School

   - F: Faculty

   - U: University Executive Committee/Senior Management

Thus, for example, a recommendation of the highest priority requiring action at both school and university levels is labelled P1-SU.

NB The Peer Group Report assigned neither priorities nor addressees in its recommendations. The priorities in the Quality Improvement Plan were assigned by the Faculty.

1*	P1-SF

Recommendation in Peer Review Group Report

Actions need to be taken to rebalance relations between schools, research centres and faculty such that the collective ethos of the Faculty of Engineering and Computing is strengthened. The faculty should identify areas for increased co-operation and sharing, including academic programme development, technical resources and support, and student recruitment and retention. In academic programmes the opportunities should be identified to share more elements and develop more joint degrees that might prove very attractive to prospective students.

Faculty/School Response in Quality Improvement Plan

The Constitution of the Faculty has been finalised and approved by the Faculty Board (January 2010). It provides a framework for many of the elements of this recommendation and clearly defines the Faculty's goal and purpose, its governance, and the membership, structures and terms of reference (general and specific) of its committees.

A new Strategic Plan is next on the agenda of the Faculty. This will, *inter alia*, address all of the issues contained in this and many of the following PRG recommendations. A Faculty Strategic Working Group (WG) will be formed to draft the document. The WG will have participants from the three constituent schools, the research centres and the faculty support staff, with ex officio membership for the Dean and the Associate Deans. Working forward from the Faculty's previous Strategic Plan (and recognising that it was too ambitious in its targets and chronology), the WG will critically assess that plan and the extent of its implementation, take on board these PRG recommendations, ensure alignment with the University's new Strategy and draft the new plan with an emphasis on a Faculty ethos, with sustainable goals and objectives and realistically achievable timescales. This Quality Improvement Plan will form an integral part of the new Strategic Plan.

There are many areas where there is clear evidence of close co-operation and sharing between the constituent schools and between the schools and the research centres. With the Faculty Committees now working more efficiently, further areas of co-operation and sharing have been and will be identified.

The Faculty Support Committee is currently examining the technical feasibility and possibility of integration of (some or all) IT resources and support on a faculty-wide basis and the Faculty Board is currently addressing the timetabled sharing of computer laboratories for all students within the faculty. A small ad hoc working group has already defined and agreed common templates for the Faculty and School webpages.

An inventory of all research equipment within the research centres and schools is being compiled by the Associate Dean for Research (ADR) with a view to maximising the possibility of sharing these expensive resources.

The Faculty has in recent years benefited from Higher Education Authority (HEA) funding for the enhancement of Information and Communications Technology (ICT) skills and this support, albeit reduced, has been received again this year (2009/10). Proportionately, all three schools have profited from this funding, and continue to do so, both for school-specific projects, and through schemes managed at faculty level, all targeted at marketing, student recruitment, retention and (some) resource updating.

Taught programmes, both undergraduate (UG) and postgraduate (PG), have proven to be an area for effective sharing and co-operation and this will continue and increase. Further enhancement of the common first year for the engineering programmes has been agreed and

will take effect in 2010/11. Common structures for migrating all the engineering programmes to 5-year M.Eng. models have been agreed and drafted by the two engineering schools and approved by the University. These new structures will incorporate more modules shared by those two schools. New common masters programmes are also being explored across all three schools. A Faculty-based Graduate School is being planned where postgraduate modules are pooled into a flexible Faculty-wide suite for access by taught postgraduate or research postgraduate students.

The School of Electronic Engineering (EE) already avails of 25 credits worth of modules from the School of Computing and proposals for options on the new 5 year structure for the EE programmes would see this grow to as much as 45 credits. The new Head of the School of Computing has committed to a reciprocal utilisation of EE modules.

At a research level, the Scientific Computing and Complex Systems modelling group (Sci-Sym) is a recently formed UDRC within the Faculty with members from all three schools (and beyond). Its core expertise is in high performance computing. Technical resources such as the group's computing cluster are shared across the Faculty.

The new Strategic Plan will specifically address the problems that are now faced by research centres, groups and individuals, namely, uncertainty of funding for sustaining their activities. Synergies, efficiencies and co-operation will be identified and optimised.

Timeline	ongoing

University Management Response

The university Executive approved the Faculty Constitution in April 2010. University management, where appropriate through the Deputy President, fully supports the Dean of the Faculty of Engineering and Computing and the Heads of the component schools in their plans for further close co-operation, streamlining of programme provision and the efficient use of research and support infrastructure and staff within the faculty.

Timeline	ongoing

2*	P1-SFU

Recommendation in Peer Review Group Report

The strategic planning processes at school, faculty and university levels need to be improved, so that, especially in the current challenging circumstances, staff at all levels are given clear guidance on the targets and priorities for the years ahead.

Faculty/School Response in Quality Improvement Plan

The path to a new Faculty Strategic Plan has been described above. Each constituent school will also develop and implement its own strategic plan in parallel, and compatible, with the Faculty plan.

Timeline	1 year

University Management Response

Executive will provide any help and guidance required in the development of the Faculty strategic plan and the plan will be reviewed by Executive in due course

Timeline	ongoing

3*	P1-SFU

Recommendation in Peer Review Group Report

The university and the faculty need to take a strong and active approach to boost undergraduate student intake numbers and quality.

The faculty should assess the demand for alternative methods of course delivery, including distance learning and blended learning, and if this assessment shows it to be appropriate, develop a strategy and implementation plan at school and faculty level, possibly in conjunction with Oscail, the DCU distance education centre.

Faculty/School Response in Quality Improvement Plan

The Faculty and constituent Schools are happy to participate fully in Faculty-based or University-based efforts to boost undergraduate student intake numbers and particularly to boost the quality of the intake. As mentioned above (Response to Recommendation 1) the Faculty has in recent years benefited from HEA funding for the enhancement of ICT skills, both for school-specific projects, and through schemes managed at faculty level, all targeted at marketing, student recruitment, retention and (some) resource updating.

Following the "Dot Com bubble burst" in 2001, ICT undergraduate (UG) programmes suffered from a bad image career-wise and student intake numbers fell dramatically in the School of Computing's Computer Applications (CA) degree programme and the School of Electronic Engineering's Information and Communications Engineering (ICE) programme. These and other factors also resulted in reductions in other Electronic Engineering programmes and in the Mechatronics Engineering programme.

The School of Computing has significantly augmented its UG intake numbers through a modest increase on the CA programme and the introduction in 2008 of a new BSc in Enterprise Computing (EC) programme, which has proved to be very popular. Intake quality has improved marginally and the effort will now be concentrated on this. When the EC programme has completed its first cycle the emphasis within the School will be on increasing undergraduate numbers through improved academic quality of intake and improved retention.

The intake onto the School of Mechanical and Manufacturing Engineering UG programmes has improved steadily in recent years and with a redesigned and actively promoted "new" Mechanical Engineering and Business (BME) programme, aimed at a wider base of applicant and due to be launched in 2010, further significant increases are expected.

Intake onto the School of Electronic Engineering UG programmes has stabilised or marginally increased in recent years. Since March 2009, the School has used the HEA ICT funding to employ a part-time recruitment and retention officer in the School to assist with these efforts. This has been a significant bonus for the School in bringing professional promotional expertise to bear on the problem and to leverage central promotional and student recruitment capacity. However, progress has been slow, and difficult to assess directly. New innovative UG degree programmes are in the planning stage; these are being designed to attract greater numbers with higher intake quality.

NFQ Level 8 engineering programmes suffer from the additional (but necessary) burden of requiring higher maths, which for many diverse reasons is abandoned prematurely by many second-level students. The two Engineering Schools have participated in engineering

profession fora to examine how these issues might be tackled, but no "magic bullet" solution has yet been found.

Staff (academic, technical and administrative), from all units within the Faculty, participate strongly in DCU Open Days, and other marketing/promotional events, but they are not promotional/marketing professionals and promotional activities should not need to take precedence over primary functions of teaching and research. The Faculty's own marketing personnel will continue strongly to promote all of the UG programmes and work closely with the University-led marketing initiatives; and the two Engineering Schools will actively promote the newly developed 5-year BEng/MEng programmes.

Notable success in recruitment of non-EU students onto taught postgraduate programmes has been achieved across the Faculty; non-EU recruitment onto UG has been not been as successful but is substantial. Further efforts are planned in this area, particularly using alternative programmes delivery models.

The Faculty, through the Associate Dean for Education (ADE) and representatives from the three schools, has opened discussions with Oscail concerning alternative methods of course delivery, including distance learning and blended learning, with particular reference to IT programmes in the first instance. The School of Electronic Engineering has a track record of remote learning provision at taught postgraduate level since 1997 and is currently providing some support on the Oscail BSc in Information Technology distance education degree programme. The discussions with Oscail are looking at how this can be expanded and how it might be possible to cross-fertilize Oscail's and the Faculty's experience and expertise in developing remote provision at UG level. This development is further encouraged by the increasing amount of queries about the availability of part-time/flexible undergraduate degrees of late, no doubt due to the economic climate.

Some University-level issues have to be addressed to facilitate progress in this potentially worthwhile project.

		Timeline	ongoing

University Management Response

The University management acknowledges and is completely supportive of the very significant efforts of staff in the Faculty to recruit both Irish and international undergraduate students to its various undergraduate programmes. It also acknowledges and wishes to encourage the close working relationship between staff in the Faculty and staff in the university Recruitment and Access Office. The University will continue to support the employment of liaison staff in Beijing, through the International Office, to aid recruitment of Chinese students. Consideration is being given to the appropriate initiatives to further research and recruitment links in India and these are underway.		
The University management would strongly encourage ongoing dialogue with Oscail in the development of links to enhance teaching provision through 'on-line' and blended learning and the initiation of mutually beneficial new programmes and initiatives.		
	Timeline	ongoing

4*	P1-SF	

Recommendation in Peer Review Group Report

The schools and faculty need to identify clearly the responsibilities and remedial measures to address the continuing

problem of relatively low retention rates in this faculty.

The schools and faculty should explore how to provide tutors who have expertise in engineering-related maths for the Maths Learning Centre and thus for support of students who experience difficulties with the maths components of their programmes.

Faculty/School Response in Quality Improvement Plan

As mentioned previously the Faculty has in recent years benefited from HEA funding for the enhancement of ICT skills, both for school-specific projects, and through schemes managed at faculty level, all targeted at marketing, student recruitment, retention and (some) resource updating. Recent improvements (albeit small) in both intake quality and retention rates can in part be attributed to these initiatives, all of which are on-going and should continue to yield progress.

The temptation that must be avoided is for any university to take a "stick" approach to the issue of retention, making it an issue at local-level without necessarily providing supports to deal with the problem, and, in particular, without indicating that, in the face of all other pressures, standards must be maintained.

The Faculty Schools are cognisant of the absolute necessity to maintain academic standards, as reducing the capabilities of computing or engineering graduates would be of benefit to neither the graduate nor their employers, nor indeed to society more generally. It is worth mentioning that strong students have in the past indicated some resentment that so much effort goes into dealing with the long "tail" in the ability distribution rather than in finding ways of challenging and developing their capabilities to the maximum. This must also be factored into our plans and has been explicitly commented on by some external examiners.

The need for increasing levels of pastoral-type input by academic staff in an effort to deal with the retention issue is in direct conflict with efforts to innovate in teaching and learning activities and to develop research output. There is a sense that, in general, staff are currently contributing at their maximum capacity and consequently we will have to find more innovative ways of dealing with these problems that do not simply require throwing more resources at the problem.

The three Schools, individually and collectively and with the support of the Faculty Office, will work to find imaginative and practical solutions to the retention/standards problem. This will constitute a major element of the Faculty Strategic Plan and will be appropriately resourced.

The School of Computing has undertaken 4 major retention initiatives: the reorganisation of timetable to spread workload, the appointment of highly-motivated personal tutors, the relocation of more-challenging material later in programme and compulsory tutorial/lab attendance for struggling students. All of these have been positively received by students and have had a positive (if somewhat limited impact). The School's Undergraduate Teaching Committee (UTC) will coordinate the development of an action plan for the continued evolution of retention initiatives.

The Engineering Schools have also been prominent over the last five years in initiatives to address the retention issue. Examples of this include elements of the Common Engineering First Year, such as the mentoring aspect of a group project module, the electronic monitoring of attendance to get an early warning of students in trouble, the development of a dedicated information presentation system to integrate multiple sources of information, including continuous assessment marks, so that personal tutors/mentors would be able to

spot students in difficulty, the development of dedicated tutorials for the students on the Open Opportunity in Engineering course, and more. A more recent initiative is the adoption of the MathXL system as an automated homework/tutorial/testing system, as it directly affects the quality of Maths tuition in 1st year.

They (the Engineering Schools) are also cognisant of the need to provide exit pathways so that students who are likely to ultimately be unsuccessful at an honours bachelor degree in engineering, nevertheless find their educational niche so that they can progress to be productive members of society.

More recently, the School of Electronic Engineering has directed its software development capacity towards the development of information-mining management tools that would allow the Head to look at long-term trends in student fall-off to facilitate better pinpointing of the "pressure-points" in the system.

The Schools feel that a particular infrastructural issue that contributes to the retention problem is a lack of social interaction between undergraduate students from different years of the same programmes. The more senior students have common-sense knowledge about how to be successful in the system that for the most part does not effectively get passed back from year to year. The Faculty undertakes to implement a recommendation made at this (and previous School) Quality Reviews to enhance the social areas of the Faculty buildings and in particular it plans to urgently put in place a space for students to develop better social networks. This issue will need direct resourcing to adapt existing space and to provide appropriate facilities.

	Timeline	3 years

University Management Response

University management through the Education and other committees and groups is examining ways to optimise student retention across the University. It recognises that there are particular challenges in relation to the mathematical ability of the student cohort. Methods to enhance feedback to students at an early stage are of particular importance to ensure that students are fully aware of the standards of achievement and approaches expected. The input of the Faculty in taking specific initiatives across an range of areas to enhance student experience and provide support at first year level is acknowledged.

	Timeline	ongoing

5	P2-FU	

Recommendation in Peer Review Group Report

The mechanisms for appointing and supporting heads of school need to be improved.

The leadership role of the head of school working with the Dean is critical but the articulation of the head's role is not clear enough, as reflected in the very different and sometimes difficult experience of the three schools in the faculty in filling and performing this role.

Faculty/School Response in Quality Improvement Plan

While this is primarily a University-level issue and the difficulties cited are University-wide, the Faculty (and its constituent Schools) are keen to contribute to the process.

The concentration of a large amount of responsibility in the role of head with only limited power to delegate, along with the vast array of issues that needs to be managed, means that the job is extremely onerous if a school has any ambitions to progress as a collective. The University (with significant input from the Deans) needs to look at how it can support the incumbents in the head role and allow the role to be more focussed on strategic and developmental issues.

The Dean will continue to work with the University — preliminary discussions have already commenced — in addressing the issues of job description, succession, appointment and support associated with the role of Head of School. In this the Dean will consult with the Faculty Management Board, in particular with the Heads of School.

| | | ***Timeline*** | 1 year |

University Management Response

University management acknowledge some current weaknesses in succession planning and internal academic promotion processes which may indirectly have led to an undermining of the importance of leadership and management roles such as Head of School. The Academic Promotions Committee is reviewing internal promotion policy, processes and procedures for Senior Lecturer in first instance, and will then move on to review those of Associate Professor, with a view to strengthening the perceived importance of leadership and management roles at school, faculty and university level. University management, working closely with the Deans of Faculty, has put significant effort into developing and running orientation training for new Heads of School. This has been received very positively by participants. The opportunities arising from the first round of faculty reviews, the DCU Institutional Review and changes in university leadership will also be taken to review the role of Head of school as the Executive Faculty structure is fully embedded in the University.

| | | ***Timeline*** | 1 year |

| 6 | P1-SFU |

Recommendation in Peer Review Group Report

In the School of Computing an urgent intervention is needed to address the severe breakdown of professional relationships in the school. This must be considered a high priority for school, faculty and university

The success of the School of Computing is critical to the success of the faculty and university into the future.

Strong and visible support needs to be given to the Head of School position from both faculty and university acting with a coordinated plan, and with due sensitivity to the legitimate concerns of the school staff. The PRG recommends that the university and faculty, in consultation with the Head of School and the school community, consider a variety of possible interventions, including, e.g.

(a) extended, external professional mediation working to support the current Head of School;

(b) the appointment, at the imminent end of the current head of school's term, of a new head of school (either an internal or external candidate) with experience suitable to address the issues, possibly also with additional external professional mediation;

(c) subdivision of the school into smaller units that could be constituted in a way to reduce stress.

Faculty/School Response in Quality Improvement Plan	
The Faculty and the School of Computing accept that some members of staff have encountered difficulties in their professional relationships with colleagues. The School has begun to work with the University and Faculty to identify the root causes of these issues and to address them positively. A new Head of the School of Computing is in post since mid February 2010. The School is committed to exploring, as a matter of urgency, a range of possible interventions to address the issues specified in this recommendation but, for now, has decided against the suggestions of engaging an external professional mediator(s) to work to support the new Head of School and of the subdivision of the School into smaller units. The Dean will work closely with the new Head in addressing the problems identified and in providing whatever support is required to resolve those problems. The Faculty will work with the University to ensure there are robust processes in place in the Schools and the Faculty for prompt grievance resolution.	
Timeline	1 year
University Management Response	
University management is fully supportive of the Dean of Faculty and Heads of School in resolving the issues raised and will continue to work with the Dean and faculty staff in ensuring that robust processes are in place to enable prompt resolution of grievance issues. This will be in the context of wider issues as indicated in Recommendation 5, above.	
Timeline	ongoing

7*	P1-SFU

Recommendation in Peer Review Group Report

The university, schools and faculty should undertake careful planning to ensure that the current level of research activity and infrastructure can be maintained. In the Faculty of Engineering and Computing this effort should produce a clear roadmap developed by the schools and faculty jointly. This should set out clear priorities in substantive areas of research and strategies to deal with anticipated developments in national and international research strategies and funding.

Faculty/School Response in Quality Improvement Plan

This recommendation is very timely and the Faculty agrees that a major challenge now facing it on the research front is to sustain the current level of research activity and infrastructure. Schools' and Faculty Research Committees, in conjunction with the Associate Dean for Research and the Research Development Officer, will continue to monitor this national problem and will develop associated strategic plans to deal with it. It will then form a major element of the Faculty Strategic Plan. The Faculty Research Centres, large and small, have significant roles to play here. Their contribution to, and implementation of, agreed plans will be crucial to the sustainability of the Faculty's strong current level of research activity.

Given what has transpired with government funding the focus has shifted to EU and corporate sources.

The second biggest, and not unrelated research challenge, is how to encourage staff to develop to pursue new research areas and innovation opportunities more beneficial for society as a whole, as existing research areas naturally mature and/or fall off as sources of funding dry up. The Review Group's recommendation to "set out clear priorities in substantive areas of research and strategies to deal with anticipated developments in national and international research strategies and funding" probably does not go far enough. We already know what many of these areas are so we are now committed to finding ways of getting the research body in the Faculty to move to "populate" these areas effectively. Already the Faculty's Research Capacity Fund has been, and will continue to be, committed to this issue.

The Faculty is also continuing to develop international links through which other sources of research funding may be leveraged. A major objective here would be to integrate teaching and research collaboration with key institutions in both EU and non-EU countries. In the case of the latter, the Faculty is to the fore in fostering and developing international links with a growing emphasis on China and India.

	Timeline	3 years

University Management Response

The OVPR recognises the growing need to enhance funding from non-exchequer sources and is putting increased resources against, in particular, supporting staff members in seeking EU funding. The Faculty can also benefit, on a competitive basis, from two new schemes being introduced by the OVPR. A new University Designated Research Initiative (UDRI) internal funding scheme is aimed at providing seed funding to develop new areas of research, while a second initiative, titled University Designated Research Facilities (UDRF), will be aimed at providing support for integrated research facilities provision. Finally the OVPR is providing additional targeted administrative support for the development and implementation of international collaborations, focused particularly on India and China. The OVPR also

emphasises the importance of continuing faculty support for their current strategic research strengths.	
	Timeline ongoing

8	P2-FU

Recommendation in Peer Review Group Report

The university and faculty should review and improve their mechanisms and structures for allocation of resources and particularly the provision of rewards and incentives to generate and support innovative and sustainable activities. This faculty has demonstrated high capacity for innovation to address the decline in student intake and staff engaged in such efforts need to be able to see the returns on those efforts.

Faculty/School Response in Quality Improvement Plan

The Faculty welcomes the Peer Review Group's acknowledgement of the Faculty having demonstrated high capacity for innovation to address the decline in student intake and is eager to work with the University in identifying ways in which there is a "provision of rewards and incentives to generate and support innovative and sustainable activities." The provision of rewards and incentives can only have limited impact when the capacity to deliver is saturated, so the development of "sustainable activities" is an important facet of the Peer Review Group's recommendation.

However, it is also recognised (i) that in recent years the success of other faculties in recruiting (greater numbers of) students onto existing and new programmes has prompted their cases for the provision of rewards and incentives and (ii) that the University has been addressing these issues and continues to do so. The Faculty, principally through the Dean, will continue to work with the University in this area.

Should such improved mechanisms and structures be agreed within, and implemented by, the University they would be replicated at Faculty level for resource allocation to the constituent schools. In the interim, the Faculty will prioritise within its Strategic Plan a local resource allocation model that addresses this recommendation.

	Timeline 1 year

University Management Response

The University will continue to work with the faculty to try to ensure that its significant innovations, such as spearheading the recruitment of international students, reaps direct benefits to the faculty, as is currently the case, in so far as the current financial environment allows this.

	Timeline ongoing

9	P2-SFU

Recommendation in Peer Review Group Report

The university, faculty and schools need to ensure that the INTRA programme is well supported and continually renewed.

The competitive positioning of the engineering and computing internships needs to be reviewed urgently.

Faculty/School Response in Quality Improvement Plan

The Faculty agrees with this recommendation and, on foot of previous recommendations by Engineers Ireland, has already taken the lead within the University in introducing reforms in INTRA for engineering students, particularly in the area of its assessment.

All three schools strongly support the INTRA programme in their various undergraduate programmes and all school staff are involved from time to time as are school-associated research centres. The duration of the student internships is generally 6 months with a couple of exceptions that are deemed appropriate to specific degree programmes.

The INTRA programme is probably the reason most frequently given by DCU students for coming to DCU. This is even more true of international students as it promises them direct work experience in a western European environment as an integral part of their degree programme. This is ironic, as there is a perceived reluctance amongst western companies to take on placement students from particular backgrounds, or from developing nations generally. Also, the conflicting needs of participating companies and of DCU students sometimes means that the student's experience of the process – particularly at the selection stage – is less than positive. Furthermore, it is not clear that the current level of interaction between the academic tutor and the company delivers the potential for collaborative links with the Schools that might be considered inherent in the process. These aspects, as well as the competition for placement positions with other third-level colleges indicated by the Peer Review Group, need to be examined in the recommended review of INTRA.

The Faculty will request, and actively participate in, a university-wide review of INTRA.

		Timeline	ongoing

University Management Response

A university-wide review of INTRA has been signalled as one of the likely priorities for the university Education Committee in the AY2010-11. The Dean of Faculty sits on that committee and has already made a significant contribution to the work of the Education Committee in focusing the discussions regarding the need for a review of INTRA. The Deputy President, as Chair of the Education Committee, has also signalled the need for this review to Academic Council at the April 2010 meeting of Academic Council. Discussion of the annual report on the INTRA Programme, from the staff in the INTRA Office, is an agenda item on the June 9th meeting of Academic council.

		Timeline	ongoing

10*	P2-SFU

Recommendation in Peer Review Group Report

Social and collegial interaction needs to be improved between academic staff, research students and research officers across the schools and research centres in the faculty. The university, faculty and schools should examine how suitable communal spaces could be provided as a means to promote stronger networking and stronger faculty identity.

Faculty/School Response in Quality Improvement Plan

The Faculty contends that the University has a responsibility to provide for the development of its students at all levels, not just research levels, through supporting social networks at functional levels such as school or faculty. This is not compatible with virtually all on-campus social areas being located in commercial food service areas.

The Faculty believes that the shortfall in "social and collegial interaction" exists at undergraduate level as well as the research level indicated in this recommendation. The provision of suitable communal spaces at school, discipline or faculty level would have to be appropriately resourced. Currently no suitable and/or available space exists within the Faculty's space allocation to provide a School / Faculty social space.

With some notable exceptions, the Faculty suffers from poor networking among staff and postgraduate students. This is reflected in the disparate nature of staff networking and the lack of opportunity for reflective discourse and sharing of ideas. A communal social space is considered by the majority of Faculty staff as being an important element in addressing this issue.

The Faculty will engage with the University in an attempt to identify, secure, resource and manage appropriate communal space(s).

While a vibrant student society exists within the School of Computing no such society exists for engineering students. Organising an engineering society and/or chapters of engineering institutions is something that takes human and financial resources to do successfully and has been one of the casualties of difficulties with recruitment and the consequent stretching of staff resources. However, the Faculty will "seed" the formation of an engineering society at the commencement of the next academic year and assist in the identification and invitation of some engaging guest speakers and the organisation of appropriate events and activities.

	Timeline	1 year

University Management Response

The University has set in place a Space Management Group which will address this issue by studying good practice nationally and internationally and applying the findings to DCU.

	Timeline	ongoing

11	P2-SF

Recommendation in Peer Review Group Report

The faculty should consider developing a shared workload allocation model for academic staff in view of the relative

success in the adoption of such models in two schools and the relative lack of success in a third. The model used should aim, among other things, to minimise staff anxiety and frustration, ensure the best-possible match of staff expertise to module topic, and establish an agreed framework for changing staff members' portfolios of modules, while achieving an appropriate level of turnover and minimising academic staff's administrative burden.

Faculty/School Response in Quality Improvement Plan

Currently there is no uniform University-wide academic workload policy.

The School of EE has a spreadsheet-based model that takes into account the wide range of staff activities and related factors (e.g. number and level of modules, assessment methods, number of students taught, research activity, administration burden at school, faculty or university level etc.).

Building on this model and the workload management systems of the other two schools, and utilising the expertise within the Faculty, a robust management tool to provide the service indicated will be designed and the resources required to do so will be allocated by the Faculty.

	Timeline	1 year

University Management Response

The University believes that at this point in time local workload allocation models at Faculty or School level are the most useful. The University will, however, make sure that transparent models are in place at local level throughout the University.

	Timeline	ongoing

12	P1-SF	

Recommendation in Peer Review Group Report

The schools and faculty should review their committee structures and communication processes to improve the participation in and dissemination of decision-making. Such improvements should aim to ensure that faculty-level committees in particular can focus on common substantive and strategic issues, that representatives on these committees act effectively in communicating two ways between school and faculty, ensuring that school staff members are kept fully abreast of developments at faculty level, and that school-level committees integrate their efforts with those of faculty-level committees.

Faculty/School Response in Quality Improvement Plan

As mentioned above, the Faculty Constitution, which defines the new Faculty Committee structures and terms of reference, is now complete and the process of developing the Faculty Strategic Plan in line with the constitution has commenced.

The Faculty Heads and the Management Board have commenced the process of streamlining the conduct of meetings and the "action lists" arising from these meetings. The Faculty Office has implemented a "Faculty Diary" of all meetings and will complete a repository of all meeting minutes accessible by all faculty members.

Each school has agreed to support Faculty-level initiatives associated with optimising structures, communication processes and the

dissemination of decisions and to implement these initiatives at school level. The Heads will ensure that all individual members of the Faculty are aware that there is an onus on them to engage positively and constructively with the committee structures and communications processes.

	Timeline	1 year

University Management Response

The University management believes that the newly agreed Faculty constitution is a key process to address these issues and looks forward to its successful implementation

	Timeline	ongoing

13	P2-SF

Recommendation in Peer Review Group Report

The faculty should take the initiative in compiling an inventory of major pieces of research equipment in its schools and research centres, with a view to eliminating duplication and rationalisation and synergies, where it is appropriate.

The university should promote the same effort across other faculties and schools.

Faculty/School Response in Quality Improvement Plan

All three schools will contribute to and support Faculty-level initiatives to address this recommendation. The Associate Dean for Research and the Faculty Research Committee have already commenced such a review and will make recommendations to the Dean and the Faculty Management Board.

From its experience in collaborating with other schools and with research centres both inside and outside the Faculty, the School of EE is of the opinion that there is no significant duplication of resources as indicated by this recommendation. The School of EE has in fact compiled such an inventory in the past.

	Timeline	1 year

14	P2-SFU

Recommendation in Peer Review Group Report

The university, faculty and schools should consider the implications of the shifting balance between undergraduate and postgraduate numbers and set parameters for this process. This analysis is of particular importance to one school in the faculty [EE] where the majority of students are postgraduates – this balance may not be sustainable.

Faculty/School Response in Quality Improvement Plan

The University is currently formulating its policy on the desired balance between undergraduate and postgraduate numbers. In setting its parameters for this, the University and, in particular this Faculty, must be mindful of the "market" and the parameters that are being set by external professional bodies. The Faculty, through its constituent schools, will develop and implement its own policy on this balance in

consultation with the University and guided by the University's parameters.

The School of EE does not share the view or the analysis of the problem that would indicate that having more taught postgraduate students than undergraduate students is inherently unsustainable. There are many models of postgraduate-only education in particular institutions in particular fields across the globe, as indeed there are models of undergraduate-only education. Certainly, the taught postgraduate students bring with them the challenge of a greater need to supervise projects. However, they also bring a greater maturity and rational career-oriented decision-making in the choice of programme area.

Nevertheless, in their work over the last year, the Schools of EE and MME have committed to five-year structures that include the first four years of undergraduate engineering education post second-level in their flagship programmes and have optimised their provision in these four years to efficiently deliver these programmes while maintaining appropriate programme individuality.

	Timeline	3 years

University Management Response		
As indicated above the University, through the work of the Education Committee, is currently examining the profile of the DCU student population and benchmarking it against other identified universities, nationally and internationally. On the basis of this examination and in depth discussion, at faculty and university levels, regarding the "appropriate and sustainable" balance among undergraduate, pos-graduate taught and post-graduate research we are in the process of formulating a policy on the desired balance between undergraduate and postgraduate numbers. A recommendation is likely to go to the university Executive on this in June 2010.		
	Timeline	ongoing

The PRG also raised two other points, which might be interpreted as recommendations for the School of MME:

A
Recommendation in Peer Review Group Report
Teaching and Learning: The previous PRG report [*PRG report for School of Mechanical and Manufacturing Engineering, March 2005*] recommended that more formal systems for gathering student feedback and for student-staff liaison should be implemented. This has been partially implemented; students are represented on programme boards, student surveys are carried out by individual lecturers, and programme boards carry out reviews on an ad-hoc basis. A plan to conduct web-based surveys was outlined in the school's Strategic Plan but was not implemented. **This should be progressed further, along with the identification of appropriate mechanisms to gather feedback from students who drop out of courses.**

Faculty/School Response in Quality Improvement Plan	
The practices implemented to date will continue and outstanding actions, currently practised in other schools or by the University on behalf of the wider student body, will become the norm for all three schools within the Faculty. The provision of the above mentioned social space(s) would support this recommendation also.	
	Timeline 1 year
University Management Response	
DCU, under the auspices of the Education Committee, is currently piloting a university wide Student Experience Survey, modelled on the Australian Student Experience Survey. This survey has been piloted in Spring 2010 in both OSCAIL and DCUBS. It is planned to roll out the survey to students in all faculties in AY 2010 – 2011.	
	Timeline ongoing

B
Recommendation in Peer Review Group Report
Community Relations: the PRG believes there are opportunities to build on existing relationships with the immediate local community to develop and enhance reciprocal links.

Faculty/School Response in Quality Improvement Plan	
MME will explore the possibility of replicating community/engineering projects run in other universities (e.g. NUIG).	
The other two schools have a good track record of involvement in educational activities with the local community; this will form an essential part of the Faculty Strategic Plan, linking in, and contributing to, with the established and on-going "DCU in The Community" project.	
	Timeline ongoing

3. PRIORITISED RESOURCE REQUIREMENTS

1. Communal space(s) for improved networking

   Assuming such space can be provided the estimate relates to refurbishing and fitting-out and some (initial) running costs

   Estimated cost: **€20,000**

2. Provision of Faculty- and School-focussed Management Information Systems.

   Many of the elements of the QuIP, and most probably the Strategic Plan, are related to or reliant upon efficient, robust and timely information systems. The estimated costs relate to proprietary and in-faculty developed systems

   Estimated cost: **€25,000**

3. ICT Support Desk

   The Faculty has access to sufficient funds to set-up this support facility but its effectiveness and credibility requires its maintenance beyond one year.

   Estimated cost: **€50,000**

4. SUMMARY OF THE ONE-YEAR PLAN

Within the year the **Faculty of Engineering and Computing** will:

- establish a Faculty Strategic Working Group (WG), representative of all Constituent Units and Members of the Faculty (as defined in the Faculty Constitution), that will formulate and draft the Faculty Strategic Plan and present it to the Faculty Management Board for approval. The process of approving the plan will involve consultation with the Members of the Faculty. It is envisaged that the elements of this Quality Improvement Plan will be incorporated in the Strategic Plan

- establish a Faculty Development Group charged with the responsibility of implementing the Faculty Strategic Plan

- examine the feasibility of new undergraduate programmes that are innovative and distinctive, and cater for preferences and needs across the spectrum of the enlarged CAO constituency

- explore opportunities, that have been identified or proposed, to offer undergraduate programmes (existing or new) to a wider community, nationally and internationally, by means of distance/blended learning and/or through collaborative initiatives with international institutions. It is envisaged that, where possible, this will be in conjunction with Oscail

- set up an ICT Learning Support Desk, primarily for undergraduate students within the Faculty

- establish sustainable mechanisms, using innovative tools, for addressing the problem of low retention rates: mechanisms to assess early the needs and difficulties of first year students; mechanisms to monitor and flag underperformance of students; mechanisms to ensure provision of appropriate feedback and remedial measures in both cases

- engage fully with, and implement, the University's current initiatives for enhancing quality in teaching and learning

- support and encourage staff to participate in relevant training courses (especially in the context of teaching) provided by the university or externally

- explore and assess, with the University, improvements (a) in the processes for identifying, recruiting and preparing potential senior office holders within the Faculty and (b) in the supports for appointees

- subject to external constraints, put in place mechanisms and structures for the transparent allocation of workload and resources, and for the provision of rewards and incentives to generate and support innovative and sustainable activities, particularly those with a faculty-wide emphasis

- negotiate with the University, through SPAMG and the Budget Committee, for the provision and funding of appropriate communal space(s) to foster and develop social and collegial interaction by Members of the Faculty

- complete and maintain an inventory of the major items of research equipment and other substantial resources in its constituent schools and research centres with the objective of promoting the sharing of these assets across the Faculty

Within the year the **Constituent Schools**, where relevant, will:

- evaluate and, where necessary, reorganise the Schools' committee structures and communications processes to improve efficiency, quality and the participation in and dissemination of decision-making

- develop, and facilitate the implementation of, School Strategic Plans in concert with the Faculty Strategic Plan

- agree upon, and implement, transparent and equitable workload allocation models and processes apposite to the individual schools but with a strong core of commonality

- strive to enhance the university experience for students by improved communications and feedback on submitted work, by creating a more inclusive and convivial ambiance, and by establishing clear channels through which the students can contribute to the development of their academic programmes

Within the year **Dean and the Head of the School of Computing** will:

- work together to address the serious issues highlighted in Recommendation 6

- agree any additional supports required within the School of Computing in addressing these issues

5. SUMMARY OF THE FIVE-YEAR (ONGOING) PLAN

Obviously the Five-Year Element of the Quality Improvement Plan will be embedded in the Faculty Strategic Plan and it would not be prudent to attempt to dictate or constrain the formulation of the latter. However, key elements that must be included to satisfy the PRG's recommendations are outlined here.

The Faculty and Constituent Schools will:

- seek to maximise efficiencies in teaching by increasing effective sharing of modules on programmes across the schools, and the design, development and provision of joint programmes or parts thereof

- establish targets for the Faculty profile in terms of undergraduate/postgraduate ratios and work to achieve those targets

- continue to address the ongoing issues of undergraduate recruitment (quantity and quality), by building upon the measures of the one-year plan, and by participating in sector-wide initiatives to increase the attractiveness of engineering and computing as career choices for secondary school students

- continue actively in developing the opportunities for non-EU student recruitment in line with agreed targets for EU/non-EU ratios

- building upon existing initiatives, commit to reforming and revitalising the INTRA programme within the Faculty

- will work with the Faculty's research centres, groups and individuals to agree and develop policies, strategies and processes for the maintenance and development of current research activity infrastructure (as per Recommendation 7). This task will be coordinated by the research committees within the schools and the faculty and the management of the larger research centres

- in cooperation with the University management, strive to preserve and enhance the quality of staff

Appendix One: School and Faculty Quality Committees and Peer Review Group memberships

Below is listed the membership of:

1. Peer Review Group

Prof. Colin Grant (Chair)	University of Strathclyde, Scotland
Dr. Christian Horn	Dundalk Institute of Technology
Mr. Paul McCambridge	Former Vice - President, Xilinx Ireland
Prof. John Monaghan	Trinity College, Dublin
Mr. Robert O'Dea	Sun Microsystems
Dr. Sue Pulko	University of Hull, England
Prof. June Verner	National ICT, Australia
Dr. Pat Brereton	School of Communications, DCU
Prof. Emmanuel Buffet	School of Mathematical Sciences, DCU
Dr. Brid Quilty	School of Biotechnology, DCU
Mr. Brian Trench and Ms. Phylomena McMorrow	DCU, Rapporteur (shared)
Ms. Ellen Breen	DCU, Rapporteur
Dr. Anne Morrissey	DCU, Rapporteur

2. School and Faculty Quality Committees (for the Self-Assessment Report)

School of Computing

Dr Rory O'Connor	Senior Lecturer(Chair)
Dr Stephen Blott	Head of School
Mr Jim Doyle	Analyst/Programmer
Mr Howard Duncan	Lecturer
Dr Cathal Gurrin	Lecturer
Dr Geoff Hamilton	Senior Lecturer
Prof Joe Morris	Professor
Ms Shiofra Murphy	School Secretary
Prof Andy Way	Associate Professor

School of Electronic Engineering

Prof Barry McMullin	Associate Professor (Chair)
Dr Conor Brennan	Lecturer
David Molloy	Analyst/Programmer
Dr. Noel Murphy	Head of School
Prof Noel O'Connor	Associate Professor
Paul Wogan	Senior Technical Officer

School of Mechanical and Manufacturing Engineering

Dr. John Geraghty	Lecturer (Chair)
Dr. Dermot Brabazon	Senior Lecturer (Away Day Coordinator)
Mr. Chris Crouch	Technical Officer
Dr. Yann Delaure	Lecturer
Ms. Suzanne Dockery	School Secretary
Mr. Liam Domican	Senior Technical Officer
Dr. Harry Esmonde	Lecturer
Prof Saleem Hashmi	Head of School
Mr. Martin Johnson	Technical Officer
Dr. Bryan MacDonald	Senior Lecturer
Mr. Michael May	Technical Officer
Mr. Alan Meehan	Technical Officer
Dr. Abdul Olabi	Senior Lecturer
Dr. Tim Prescott	Senior Researcher
Dr. Joseph Stokes	Senior Lecturer
Dr. Tamas Szecsi	Senior Lecturer
Mr. Eoin Tuohy	Technical Officer

Faculty

Mr Jim Dowling	Dean of Faculty (Chair)
Ms Michele Pringle	Faculty Manager
Ms Jennifer Bruton	Associate Dean for Education
Dr. Dermot Brabazon	Associate Dean for Research
Dr Stephen Blott	Head of School of Computing
Dr Rory O'Connor	Senior Lecturer - Computing
Prof Barry McMullin	Professor – Electronic Engineering
Dr. Noel Murphy	Head of School of Electronic Engineering
Dr. John Geraghty	Lecturer – Mechanical and Manufacturing Engineering
Prof Saleem Hashmi	Head of School – Mechanical and Manufacturing Engineering

3. School and Faculty Quality Committees (for the Quality Improvement Plan)

School of Computing

Dr Rory O'Connor	Senior Lecturer(Chair)
Dr Stephen Blott	Head of School
Mr Jim Doyle	Analyst/Programmer
Dr Cathal Gurrin	Lecturer
Dr Geoff Hamilton	Lecturer
Prof Joe Morris	Professor
Prof Andy Way	Associate Professor

School of Electronic Engineering

Prof Barry McMullin	Associate Professor (Chair)
	(**New**) Director of the Rince Institute
Dr Conor Brennan	Lecturer
Dr Jenny McManis	Lecturer
Prof Pat McNally	Professor
Dr. Noel Murphy	Head of School

School of Mechanical and Manufacturing Engineering

Dr. John Geraghty	Lecturer (Chair)
Mr. Liam Domican	Senior Technical Officer
Dr. Lisa Looney	Senior Lecturer
Dr. Joseph Stokes	Senior Lecturer

Faculty

Mr Jim Dowling	Dean of Faculty (Chair)
Prof Mike Scott	(**New**) Head of School of Computing
Dr. Noel Murphy	Head of School of Electronic Engineering
Prof Saleem Hashmi	Head of School of Mechanical and Manufacturing Engineering
Dr. Lisa Looney	Senior Lecturer - School of Mechanical and Manufacturing Engineering