

DEPARTMENT OF ELECTRICAL & ELECTRONIC ENGINEERING

PEER REVIEW GROUP

- Professor P. Fitzpatrick, School of Mathematical Sciences, and Acting Dean of Science, UCC (Chair)
- Professor C. Hill, Department of Microbiology, UCC
- Dr C. Lyden, Analog Devices, Ireland
- Professor J. Gardner, Professor of Electronic Engineering, and Dean of the School of Engineering, University of Warwick, UK

SITE VISIT

The site visit was conducted over 2.5 days from 27-29 April 2005 and included visits to departmental and library facilities in UCC and meetings with

- Head and staff of the department as a group and individually
- Representatives of undergraduate and postgraduate students
- Representatives of employers, past graduates and other external stakeholders
- Mr. Michael O'Sullivan, Vice-President for Planning, Communications & Development
- Professor Áine Hyland, Vice-President
- Professor Peter Kennedy, Vice-President for Research Policy & Support
- Ms. Carmel Cotter, Finance Office

An exit presentation of the principal findings of the Peer Review Group was made to staff of the department in the afternoon of the second day.

DESCRIPTION OF DEPARTMENT

Note: Data given is for the academic year 2004/05

Head of Department:	Professor Robert Yacamini
Staff:	13 Academic Staff (1 Professor, 1 Associate Professor, 5 Senior Lecturers, 6 Lecturers), 1 Administrative Staff, 5 Technical Staff, 1 Departmental Pperative
Staff Academic FTE:	15.22 (13.00 FTE academic staff; 2.22 FTE part-time budget)
Student/Academic Staff Ratio:	12.05
Location of Department:	Electrical Engineering Building
Degrees/Diplomas offered:	BE, HDip, MEng, PhD

NUMBER OF STUDENTS

The Department has 183.42 Student FTEs distributed as follows:

Undergraduate Student FTEs

Year 1	Year 2	Year 3	Year 4	Total U/G	Economic	Visiting European
20.00	27.67	41.50	49.67	138.83	5.75	2.75

Postgraduate Student FTEs

H Dip	Master Taught	Master Research	PhD	Total P/G
0.25	9.17	14.08	21.08	44.58

MISSION STATEMENT

“To strive for excellence in teaching and research in the professional discipline of Electrical and Electronic Engineering through enhancing the student learning experience and nurturing staff development.”

AIMS OF DEPARTMENT

- To graduate students of the highest possible standard with a solid theoretical foundation in engineering science and a comprehensive understanding of the technologies underpinning current developments in engineering practice
- To produce graduates who can adapt and apply their knowledge and intellectual ability to the analysis and solution of emerging engineering challenges
- Within the discipline, the Department aims to contribute to making UCC the first choice University for the best Leaving Certificate students.

GENERAL COMMENT ON QUALITY REVIEW

The reviewers found the self-assessment report to be comprehensive and succinct. The documentation for the recent accreditation visit of the Engineers Ireland (EI) was also provided.

The Department has an excellent undergraduate programme which is highly valued by its staff and students alike. Likewise, it has developed a strong cohort of research Masters and PhD students and is beginning to attract postdoctoral researchers. There are several high quality research programmes led by enthusiastic and committed researchers, and funded, to a certain extent, under competitive research award schemes. There is a well-established collegial atmosphere among all sections of the staff (academic, technical, and administrative) and a spirit of cooperation in the good organisation of the Department.

Teaching. The undergraduate student experience of the Department is very positive and students are challenged and stimulated by their programmes of study. They are particularly enthusiastic about the Third Year placement, but also spoke highly of the quality of the practical courses and the facilities on offer to them, including substantial access to the Department outside of normal hours. The quality of the physical environment is very good and the Department is well-resourced. The broadly-based degree is widely regarded as a

strength, not only by the staff and students in the Department but also by graduates and the industry representatives interviewed, and there is evidence that it is leading to careers in non-traditional areas outside the mainstream of EEE, such as banking and finance, where the students are valued for their technical expertise, their problem solving skills, and their ability to absorb new techniques. The staff-student committee seems to be well established, and students perceive staff as friendly and helpful, and feel comfortable in approaching them directly when they have problems.

Research: The Department has a very good track record in long-term industry-focussed research and has a corresponding high level of research funding. In recent years the emphasis has broadened to include an emphasis on peer-reviewed journal publication, and prestigious conference publication, as a high priority.

PROGRESS MADE ON THE IMPLEMENTATION OF PRG RECOMMENDATIONS

A meeting to discuss progress made in implementing recommendations for improvement arising from the review of the Department of Electrical and Electronic Engineering was held on 28 November 2006.

The Department confirmed that the process of undergoing a Quality Review had been a very useful and beneficial one for the Department, while at the same time noting the administrative burden that the gathering of background data placed on the Department.

Present: Professor Patrick Fitzpatrick, Head, College of Science, Engineering and Food Science
 Professor Patrick Murphy, Head, Department of Electrical and Electronic Engineering
 Dr. Norma Ryan, Director, Quality Promotion Unit
 Ms. Deirdre O’Brien, Administrator, Quality Promotion Unit

Abbreviations

PRG: Peer Review Group
 QPC: Quality Promotion Committee
 HR: Human Resources
 VP: Vice-President
 QIP: Quality Improvement Plan
 EEE: Electrical & Electronic Engineering

Recommendation of PRG	Recommendation of QPC	Follow-up Report November 06
That the Department reconsider student workloads, in the light of University, Irish, and international norms, and from the perspective of the overall educational experience, especially in the Fourth Year.	Endorsed. Noted comments of PRG and also that the constraints imposed by the accreditation system are now less than heretofore.	Ongoing The Department did consider the student workload and is considering the possible changes to the curriculum in order to improve this, whilst adhering to the requirements of the accrediting body, Engineers Ireland, for accreditation of the Degree. The Department is committed to a reorganisation of student workloads in the near future.

Recommendation of PRG	Recommendation of QPC	Follow-up Report November 06
<p>That the Department extend its curriculum to permit students to choose a limited number of appropriate modules from outside the EEE curriculum in areas of value to the practising engineer, independently of its response to the Bologna Agreement.</p>	<p>Endorsed.</p>	<p>Ongoing</p> <p>The Department is currently investigating the possibility of a five credit module in each year of the Degree programme themed on professional practice and are in discussions with industry professionals as to the most appropriate method for delivery of this.</p>
<p>That the Department curriculum committee work closely with the service teaching departments to ensure that their materials are geared to the EEE curriculum, and that their lecturers liaise with student representatives and the EEE staff-student committee to ensure that any problems are dealt with in a timely manner.</p>	<p>Strongly endorsed.</p>	<p>Ongoing</p> <p>The Department is liaising and will continue to liaise with departments providing service teaching, to ensure a satisfactory level of service. The staff-student committee continues to function successfully with regular meetings, follow-on actions and minutes published on the departmental notice board.</p>
<p>That the Department carry out market analysis with a view to the development of further programmes at the taught Masters level.</p>	<p>Strongly endorsed.</p> <p>QPC commented on the need for more proactive action on the part of the Department in recruitment of both undergraduate and postgraduate students. QPC strongly endorsed the recommendation market analysis be carried out immediately and that new taught Masters programmes be developed and put in place as soon as possible.</p>	<p>Implemented and ongoing.</p> <p>The Department is involved in two new successful taught Masters programmes: Mechanical Engineering and Sustainable Energy.</p>
<p>That the Department develop programmes in Continuing Professional Development, after appropriate market analysis.</p>	<p>Strongly endorsed.</p> <p>See response to the recommendation above</p>	<p>The Department has undertaken market analysis which has consistently shown that there is no sustainable market for Continuing Professional Development courses in this particular field.</p>

Recommendation of PRG	Recommendation of QPC	Follow-up Report November 06
<p>That the Department work with the University administration in carrying out a cost-benefit analysis of the early implementation of the Bologna Agreement in the Department.</p>	<p>Noted the recommendation and endorsed the action proposed by the Department (the Department will consult with the offices of The Registrar & VP for Academic Affairs and VP for Finance & Administration to identify hurdles to be overcome in this process).</p>	<p>This recommendation is no longer relevant in the current context of the Bologna Agreement. Thus no action has been taken.</p>
<p>That the Department consider the overall education and guidance of research postgraduates and postdoctoral researchers to ensure that these groups are provided with a continuing high level of supervision, technical support, and facilities, and that opportunities are sought to provide them with wider perspective in their studies.</p>	<p>Recommendation strongly endorsed. QPC requested that the department put in place appropriate procedures to implement the recommendation with immediate effect. This is not a policy issue and the QPC requested the departmental plan to be submitted to the QPC as soon as possible.</p>	<p>Implemented The Department has put in place an extremely efficient and effective Graduate Studies Committee.</p>
<p>That the Department engage in discussions with appropriate authorities, such as the Office of the Vice President for Research and the Department of Human Resources, to represent the interests of postdoctoral researchers and research officers in developing their career paths.</p>	<p>QPC noted recommendation and endorsed the comment by the Department concerning the university-wide application of the issue.</p>	<p>The University is very actively considering this issue as is the Irish Universities Association. It is hoped that developments will be made in the next year.</p>
<p>That academic staff workloads – in the areas of teaching, administration, and research supervision, among others – be examined with a view to the establishment in the Department of a transparent allocation model that ensures relative equity of overall workload distribution.</p>	<p>Strongly endorsed recommendation. QPC requested that a transparent workload allocation system be put in place with immediate effect in the department</p>	<p>Implemented A comprehensive and transparent workload allocation model has been developed and agreed with all academic staff and has been implemented very successfully within the Department.</p>
<p>That the Department make appropriate provision for continuing professional development of its technical staff.</p>	<p>Endorsed.</p>	<p>Implemented</p>

Recommendation of PRG	Recommendation of QPC	Follow-up Report November 06
That the Department immediately seek to improve the staffing levels in the area of administrative support.	Noted.	Not implemented.
That financial planning be undertaken systematically by the Department, and that financial information be provided, at appropriate levels of detail, to all staff.	Endorsed.	The Department is engaged in financial planning and will continue to inform the Head of College of its plans to replace ageing equipment and to update laboratories in particular. All staff are informed of the financial details, in so far as they are available.
That the Department take a strategic view of the development of its research, possibly through the establishment of a Research Committee; that it aim to build substantial research groups, either in-house or through alliances with researchers outside the Department; that a mixture of industry-focussed and frontier research be maintained; that every effort be made to ensure that research is translated into publication; that research active staff are supported, to the extent that this is possible, through the adoption of a transparent workload model.	Strongly endorsed. Noted that the Department needs to become aware of all research and collaboration opportunities both within and external to UCC. Department needs to develop a research plan taking into account collaborative research links with departments such as Physics, Computer Science and The Tyndall Institute.	Ongoing The issue of developing a research strategy is still on the Department's agenda and will be fully addressed in the near future. The importance of this is fully recognised by the staff of the department. The Department has adopted a transparent academic workload model and supports students in the publication of their research prior to completion of their graduate studies. Staff are being mentored and supported in development and publication of research.

Recommendation of PRG	Recommendation of QPC	Follow-up Report November 06
<p>That the Department make improvements in its strategic planning process; that it further develop its Strategic Plan, setting clear priorities in short-, medium-, and long-term objectives, in the light of continuing market analysis; that it adopt a more outward-focussed view in establishing itself as a significant component of the wider University community; that it embrace the University restructuring process as an opportunity for further development of the discipline of Electrical and Electronic Engineering.</p>	<p>Strongly endorsed.</p>	<p>Implemented and ongoing.</p> <p>The Department is constantly reviewing its strategic plan and recently held an Away Day for staff which was an extremely positive experience. A set of action points were drawn up as a result of this Away Day and the Department has found these extremely useful in terms of strategic planning.</p>
<p>That the Department of Electrical and Electronic Engineering and the Department of Microelectronic Engineering, together with the University, consider the full amalgamation and co-location of the two Departments.</p>	<p>Endorsed.</p> <p>QPC recommended that proposals in relation to implementation of this recommendation be brought forward within the next couple of months.</p>	<p>Discussions on the full amalgamation of both departments are ongoing but a resolution has not been reached to date. A joint programme for the undergraduate degree has been developed and students have been accepted into this programme for the past two years. The two departments are working together, with the Head of College of SEFS, to determine the best way forward for both students and staff.</p>