Department of Electrical & Electronic Engineering

Head of Department: Professor R. Yacamini
No of Staff: 10 full-time academic staff
Location of Department: Electrical Engineering Building, Main Campus, UCC
Degrees offered: BE (Electrical); MEngSc, PhD;
No of students: 80 admitted into the BE (Electrical) Degree programme each year (+ 5 mature
        students)

Goals of the Department
To ensure that graduates have a very strong grasp of the theoretical underpinnings of modern engineering practice and a familiarity with the current applications of those principles.
To continue developing the research activities of the Department to ensure a high standard with international recognition.

Summary of Recommendations made by Department in accreditation document

- To continue to improve the curriculum of the undergraduate degree programme.
- To strengthen the postgraduate research activity of the department by developing means of encouraging more students to undertake PhD programmes.
- To continue to develop part-time MEngSc and PhD degrees and professional courses as part of a continuing education programme.
- To continue increasing the funding of research from external sources by all means possible and to seek funding for a number of postdoctoral researchers in the department.
- Approval for and recruitment of an Associate Professor in Telecommunications to ensure growth of this important research activity.
- A requirement for a major injection of capital funding into research test equipment to provide a serious research environment for electrical and electronic engineering graduates and to provide services to industry.
- A doubling of the existing consumable and part-time staffing budgets to enable the sustaining of a quality education at undergraduate and postgraduate levels in a high technology environment.

Decision of the Institution of Engineers of Ireland

That the BE (Electrical) Degree be re-accredited for the five year period 2000-2004.

Summary of Recommendations to the University made by Panel of Reviewers

1. Courses in the general topics of the engineer in society, and software engineering should be introduced into the programme.
2. A curriculum review group should be established to monitor the development of the course curriculum in all its aspects
3. Formal tuition in communication skills and report writing should be incorporated into the programme
4. The student:staff ratio should be reviewed and reduced to a level closer to the IEI norm of 14:1.
5. The student contact hours should be reviewed and increased to a level closer to the IEI minimum of 2,500 hours

Comments

The courses already offered by the department in the BE Electrical Degree already contain a good deal of software engineering content. However it is not separately identified. The curriculum review group of the department will review the content of the UCC courses, will compare this to courses offered in other institutions and will endeavour to identify the continuous development of the theme of software engineering in the degree programme. The curriculum review group will also examine the question of how to introduce the topic of the 'engineer in society' into the course and what the content and extent of such a course should be. There is already extensive tuition in communication skills and report writing, including a number of guest speakers on these topics, in Year Three and Four and courses as organised by the Student Careers Office in UCC. The department will ensure that these elements are clearly identified and augmented where appropriate.

Curriculum review is an on-going activity of the department, although organised on an 'as needs' basis at the present time. The department will put in place formal arrangements with immediate effect.

The current contact hours are in excess of 2000 hours. An increase in the number of contact hours is very difficult to comply with without the addition of new staff and extra physical resources (space and equipment). Under the modular scheme the department is examining the possibility of increasing the amount of design work, outside of timetabled contact hours, which the students are required to complete, in an effort to bring the workload of the students in line with the recommendation of the IEI.

Recommendations and comments of the Quality Promotion Committee

The Committee welcomes the Department's plans to implement the recommendations of the Panel of Reviewers. With regards to the other recommendations of the department contained in the strategic plan of the department the Committee recommends that these be acted upon in the normal manner, i.e. that the Department should draw up detailed plans and present these to the appropriate bodies within UCC.

Progress on Recommendations for Improvement

Recommendation of PRG	Recommendation of QPC	Follow-up Report – Oct. 02
Courses in the general topics of the engineer in society, and software engineering should be introduced into the programme.	Endorsed recommendation and welcomed proposed action by department	This is being reviewed currently. The department is aiming to clearly identify the elements of the 2 topics in the courses and to strengthen where necessary. It is planned to make the topics explicit to students in manuals and handbooks. Students are exposed to both topics extensively throughout the 4 years of the programme.
A curriculum review group should be established to monitor the development of the course curriculum in all its aspects	Endorsed recommendation and welcomed proposed action by department	This has been done
Formal tuition in communications skills and	Endorsed recommendation and welcomed proposed action by	This has been done, particularly in the 3rd and 4th years of the

Recommendation of PRG	Recommendation of QPC	Follow-up Report – Oct. 02
report writing should be incorporated into the programme	department.	programme.
The student: staff ratio should be reviewed and reduced to a level closer to the IEI norm of 14:1	QPC noted the recommendation and that action to reduce student: staff ratios is a complex area without 'fast' solutions.	The student: staff ratio is not directly within the control of the department. It is reducing slightly. There is currently a vacant lectureship which the department is seeking permission to have filled.
The student contact hours should be reviewed and increased to a level closer to the IEI minimum of 2,500 hours	Endorsed recommendation, noted the comment of the department and the review by the department of possibilities of addressing recommendation.	This issue will be addressed following discussion at a national level with the IEI and the other Deans of Engineering Degree programmes in universities in Ireland.

Recommendation of QPC	Follow-up Report – Oct. '02
That the IEI should be informed in writing of actions taken as a consequence of the review report. A copy to be sent to QPC for information.	Will be done when IEI request information
Benchmarking of Department against one or more departments at a national/international level.	The department already is benchmarked because of the requirement for accreditation of the BE Degree by the IEI. The curriculum and other activities are largely determined by accreditation requirements. The department plans to review curriculum and activities of appropriate departments at home and abroad prior to the next review.

Recommendations made by Department	Recommendation of QPC	Follow-up Report
To continue to improve the curriculum of the undergraduate degree programme.	Welcomed and endorsed	Action on curriculum improvement is on-going.
To strengthen the postgraduate research activity of the department by developing means of encouraging more students to undertake PhD programmes.	Welcomed and endorsed	There has been a very significant increase in the number of students registered for PhDs in the department over the past 4 years. It is hoped the numbers will increase again in the coming year.
To continue to develop part-time M Eng Sc and PhD degrees and professional courses as part of a continuing education programme.	Welcomed and endorsed	This has happened with a number of students registering for part/time M Eng and PhD Degrees. It is planned to conduct a review of professional courses during 2002/03 at faculty level with the aim of developing such

Recommendations made by Department	Recommendation of QPC	Follow-up Report
		courses.
To continue increasing the funding of research from external sources by all means possible and to seek funding for a number of postdoctoral researchers in the department.	Welcomed and endorsed	Most of the staff have external funding to support their research. The department now has 2 postdoctoral researchers and plans to increase this number by 2 in the coming year.
Approval for and recruitment of an Associate Professor in Telecommunications to ensure growth of this important research activity.	Welcomed and endorsed	Done. An Associate Professor in Telecommunications has been appointed and taken up post in the department. However it should be noted that the post was filled by an internal candidate and the post vacated by the appointee has not been filled.
A requirement for a major injection of capital funding into research test equipment to provide a serious research environment for electrical and electronic engineering graduates and to provide services to industry.	Welcomed and endorsed	The department has been extremely successful in acquiring major items of research equipment over the past two years. Most of the staff have external funding to support their research. Interactions with industry have increased.
A doubling of the existing consumable and part-time staffing budgets to enable the sustaining of a quality education at undergraduate and postgraduate levels in a high technology environment.	Welcomed and endorsed	The level of funding for consumables and part-time staffing has remained unchanged for the past 5 years, representing a real decrease in support for the core teaching.