

Comhairle na nDámhachtainí Ardoideachais agus Oiliúna
The Higher Education and Training Awards Council

**Abridged HETAC report on the application by the Institute
of Technology Sligo for accreditation to maintain
postgraduate research degree registers at doctoral level in
Environment and Mechanical and Manufacturing
Engineering**

May 2005

1 INTRODUCTION

The Institute of Technology Sligo (ITS) submitted (23 June 2004 with an update on 16 August) an application to HETAC for accreditation to maintain registers of postgraduate research degrees at doctoral level in two fields: Environment and Mechanical and Manufacturing Engineering.

A Panel of assessors (Appendix A) was assembled to evaluate the application and visited the Institute on 24 September 2004 and met with the management team as well as research staff and students.

HETAC following consideration of the Panel's findings and the response of the institute decided to accredit the Institute for five years (until **24 September 2009**), to maintain a register of postgraduate research degrees at masters level and doctoral level *in areas in Environment and Mechanical and Manufacturing Engineering reflecting the expertise of the research-active academic staff.*

Accreditation is subject to conditions determined and published by HETAC from time to time and may be reviewed by HETAC at any time.

2 FINDINGS

2.1 General

The application showed both focus and a sense of realism with regard to the context in which the Institute is operating, its resources, its capacity (and need) to make choices and its ambitions for self-development.

The presentation by senior management gave the impression of a well-run, self-reflective, open and responsive organisation, one where collegiality informed both day-to-day running and strategic planning. This impression was confirmed in all the subsequent sessions. Management clearly shared the expressed view of the experts on the Panel that the development of research and a research culture in the IT sector had to be a dynamic one. At the same time the tension, evident in some other institutions within the broad remit of the IT sector, between research-active parts of the institution, and the rest, appeared to have been addressed in a creative and pragmatic fashion.

It is clear that IT Sligo has made very considerable and successful efforts to promote a research culture within the relatively recent past, and that, particularly in the last years, impressive strides have been made.

The actual size of the units seeking accreditation gives pause for thought. Were a few of the key individuals to be removed there might be a question as to whether or not the same dynamic would continue to inform research development and graduate student education.

Strengths

The Panel observed that the Institute had demonstrated a sustained capacity to supervise a significant number of Masters and PhD programmes successfully over many years.

The Panel was broadly of the opinion that the standard achieved by the graduates at both doctoral and masters levels is comparable to that in Irish and UK universities.

The Panel was broadly of the view considering the Institute's track record and its current configuration that, having clearly addressed the assessment and related issues, the it had the capacity to make a success of maintaining the register at both levels.

Notwithstanding some reservations about recommending accreditation at doctoral level, the Panel weighed towards the opinion that Institute could be accredited to maintain a register of postgraduate degrees at both masters and doctoral levels in the fields presented.

The overall impression of the research-active staff was that:

- They were enthusiastic about evolution of research at the Institute.
- They believed that research benefited the quality of teaching at all levels (not just in terms of content and their own enthusiasm but also in terms of providing excellent demonstrators, etc.).
- They genuinely enjoyed research and it enhanced their job satisfaction.
- Research was something that they really wanted to do – it was not being “thrust upon them”.
- They had a realistic and sensible approach in identifying inter-disciplinary research niches of importance to local societal needs, so that they were working in fundable areas in which they could compete with more established universities.

Areas for improvement

With regard to the quality and range of the staff publications in the relevant areas, it is to be hoped, but also expected, that these represent an evolution towards greater national and international visibility, particularly given the quality of recent staff and graduate recruitment.

The numbers (of undergraduates) in Environment give some cause for concern. But again, those concerns are balanced by the presence of a number of research students from other institutions, some of them clearly of high quality.

It is recommended that all stakeholders (students, staff, graduates, employers, industry) be involved in the quality assurance procedures.

The research management strategy is elaborate but is not convincing in regard to targets and performance indicators.

Doctoral research by its nature should be of international class, measured by peer-reviewed publications; presentations at international conferences etc. There is a concern that to date this kind of output has been limited from the Institute – clear targets need to be set in this area and if possible institutional supports, i.e. travel fund etc. put in place.

The research handbook is very understandable and clear but it might be useful if results from evaluations and progress reports (see below) were to be used to inform revisions and elaborations.

Procedures for handling annual satisfaction surveys and quarterly progress reports have recently (January 2004) started. Greater attention needs to be given to the systematic analysis of the returns (and failure to make returns) to determine what can be learned from the progress reports. In general, more feedback needs to be given to students and staff about the results of internal monitoring of research quality and the resulting improvement actions.

It is planned that in 2006/2007 at least 2 staff members in each school who have not been involved in research projects should become involved in research each year. The Institute might consider bringing forward this target owing to the urgency of the need to strengthen the research base.

Although it is clear that links with industry and universities have been established (through research seminars, research student placement, collaborative research etc.) it is recommended that even stronger growth in such links be targeted to help strengthen the research base. Consideration might be given to the engagement of part-time staff from industry and the universities as is becoming quite common in European institutions (e.g. in the Netherlands) that are similar to IT Sligo..

Although some time off teaching is allowed to researchers, more needs to be done. The Institute might wish to consider, for example, a centrally funded part time secondment scheme giving time off in lieu of development of graduate modules etc. such an initiative might be used to support visiting staff on sabbaticals.

A formalized sabbatical programme (which is being planned) should be implemented.

Mechanisms by which senior researchers can be attracted to IT Sligo need to be explored.

Publication of results in peer-reviewed archival journals needs to be encouraged and used as a performance metric.

It is important to note that in most European countries the research base and institutional links of IT Sligo to international research would probably be seen as too weak for awarding Ph.D degrees. This might be a problem for those (i.e. HETAC) who do accredit Ph.D programmes when signing future mutual recognition agreements.

2.2 Procedures and Codes

Strengths

The quality of Institute's Research Handbook suggested that much of the material was the product of considerable thought and effort and not mere compliance. The practical usefulness of the content demonstrated a keen awareness among staff of the academic needs of research students and the objectives of research degrees, and a genuine desire to provide a high-quality training.

Areas for improvement

At present, it may be the case that some staff are supervising students for programmes above their own qualification – although in some cases external researchers are involved as co-supervisors. The Institute must establish clear criteria for approval of supervisory arrangements.

The assessment procedure is not clearly understood by the students, nor is it adequately described in the handbook. In particular, the specific role of the internal and external examiners needs to be elaborated. The assessment procedures need to be revised and agreed with HETAC.

The issue of staff and student responsibility (for the decision to submit) arises from the HETAC question (63.1). While the Institute's representation of the mutual process that takes place between supervisor and student is plausible, it is necessary to make an explicit statement as to where that responsibility lies to manage any future situations where problems arise at the assessment stage.

The procedures for the viva voce examination should be set out in detail, including the roles of the external and internal examiners. The requirements for examiner's reports should be stated more clearly.

It is not evident that there is any policy on whether or not staff might register to conduct research in the College. If this were the case then special arrangements for examination would be necessary (two external examiners).

There is a heavy reliance on a limited number of currently research active staff to act as mentoring supervisors/co-supervisors – guidelines as to how many full-time equivalents (accounting for supervision and co-supervision) that can be co-supervised should be set out to ensure that adequate time is available for all students.

2.3 Research in 'Environment'

The research students encountered had a high regard for Sligo IT, for its staff, and for the quality of the supervision that they had been receiving.

Indeed, one of the assessors came away with the impression that they were being more nurtured than many students in apparently very successful groups in more established universities.

The students clearly believed that they were receiving a good research training, and that they were not just being used to provide technical support for academic researchers. Significantly, they were aware that other institutions might have offered more extensive research facilities, but felt that their research had never been hampered by inadequate resourcing. They spoke highly of the support they had received from partner organisations in collaborative programmes. Such joint programmes were clearly working well.

The students were impressive when answering the assessor's questions on their individual projects; they came across as well informed, enthusiastic and highly articulate.

The Panel came away with a very favourable impression of what has been achieved at IT Sligo over the past few years, and of their future plans for development. Most importantly it was broadly confident that the research students would receive a quality research training and would be producing work that would be publishable in quality journals.

Nonetheless it has to be said that staff and students need to be much more ambitious about disseminating their research by publishing in archival-quality peer reviewed journals.

The environment research staff obviously takes pride in the Institute and its reputation, both nationally and to some extent internationally.

Strengths

The Institute has a long track record of research in the environment area and evidence of established collaboration with other Institutes, particularly in Ireland but also overseas.

There is good management/leadership.

The staff appear to be well motivated and very positive towards research.

There is evidence that past and current research activity has fed into teaching – design of new courses, modification of existing courses etc.

There is also evidence of flexibility with respect to the targeting of funding, industrial linkages etc. along with a definite focus on applied research, which should be retained.

The target set for the environment field of having 20% of staff actively involved in research is realistic.

The experience of research students currently undergoing research training in the environmental area is very positive, and compares very well with the position in other Irish third level Institutions.

Graduates of IT Sligo in this field, including those receiving post-graduate awards based on research, are said to very highly regarded by employers.

Areas for improvement

Space is a limiting factor and the completion of additional space, although planned, is very important for the institution to meet the targets.

The benefit/incentive to research-active staff with respect to promotion and career advancement within the Institute is unclear and will be a serious barrier to the recruitment of research active staff.

There are issues to be addressed concerning the technical and administrative support for Doctoral research during the summer months;

Other strengths and areas for improvement that were found to be common to both areas reported elsewhere in the document.

2.4 Mechanical and manufacturing engineering

There is an effective research community in this area the research students have good resources that will be enhanced when the new building accommodation becomes available.

Good supervision is available and while limited in the number staff supervisors, this field has gained a critical activity level that should allow it to consolidate and develop so there is no doubt that the research activity as is should certainly continue at MSc/PhD level at IT Sligo in Mechanical and Manufacturing Engineering.

Strengths

The research activity is well managed. The research active staff are enthusiastic and the evidence suggests that the procedures followed are appropriate.

A modest research group hosting a number of Masters students and PhD programmes has been initiated in Bio-Engineering with a vibrant inter-disciplinary dimension appropriate to the field and local expertise at IT Sligo (Tool making).

The programmes are appropriately graded and meet the usual standards required in this area.

The research is being presented at a range of conferences (national and international).

The group includes some visiting students and interaction with other institutions (NUIG and TCD).

The Institute provides some relief for researchers through a reduction of teaching load and recognizes research activity in its internal promotion procedures.

Part-time students are being well managed.

A quarterly monitoring system is in an advanced state of implementation.

The students involved in the research initiative are extremely motivated and enthusiastic about their work.

The research unit has been successful in attracting funding (some of which has been used to second internal staff to free them from teaching duties.)

The Institute management is extremely supportive of this research initiative

Staff professional development is being strongly pursued.

Areas for improvement

The size of the unit is small and is critically dependent on key senior researchers

New ways of funding for networking activities should be explored - now that successes have been achieved with large infrastructural type funding initiatives

Research training courses are provided and attendance is recorded, however they are not mandatory.

The return of quarterly reports is not 100% complete. The task is easily accomplished for students and researchers who have regular consultation. Lack of report returns may indicate difficulties in completion and these are the cases that need to be followed up.

The students were unsure of the assessment processes and would appreciate a dry run to experience a *viva voce* examination, which would be very helpful as an internal preparation.

It was somewhat surprising to learn that student teaching includes lecturing, it would normally be expected to be comprised of laboratory/tutorial demonstration and indeed the students expressed their feeling happier with the latter.

3 THE PANEL

The evaluation Panel consisted of:

Professor Eda Sagarra Pro-Chancellor of the University of Dublin (TCD) Chairman

Cathriona Conneally (Graduate representative) Boston Scientific

Professor Malcolm Cresser University of York

*Dr Mark Fredericks Netherlands-Flemish Accreditation Organisation
(NVAO i.o.)*

Dr Padraic Larkin Deputy Director General Environmental Protection Agency

Dr. Vincent O'Flaherty, Microbial Ecology Laboratory, NUI, Galway,

Professor John Orr Mechanical Engineering Queens University Belfast

Professor Henry Rice Mechanical and Manufacturing Engineering Trinity College Dublin

with

Dr Peter Cullen Higher Education and Training Awards Council in attendance.