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## College of Technology, Kevin Street : General Description

Dublin Institute of Technology

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COLLEGE OF TECHNOLOGY, KEVIN STREET, DUBLIN 8

GENERAL DESCRIPTION

## The College:

The College is one of four operating under the City of Dublin Vocational Education Committee. It consists of the College Council, the Principal and Staff, and the Academic Board. The Council of the College advises the Vocational Education Committee generally on the government and running of the College and the Academic Board deals with matters affecting courses and teaching.

The members of the College Council are:

Captain J. A. Kelly (Chairman)  
Mr. P. Donegan  
Mr. M. Donnelly  
Mr. T. P. Hardiman  
Mr. A. Harkin  
Mr. M. McEvoy  
Dr. A. K. Mills  
Staff Representative  
Student Representative  
Mr. H. de Lacy (Principal)

## Origins:

One of the consequences of the Artisans' Exhibition of 1885 was the creation of the "City of Dublin Technical Schools" in 1886 and the opening of those schools in Kevin Street in October 1887, with 78 students. Within a few years the familiar difficulties of inadequate accommodation and inadequate finance were impeding development and expansion. The implementation of the Technical Instruction Acts in 1893 improved matters and a considerable increase in numbers of students attending was an almost immediate result. By 1895 it was necessary to rent additional premises in Kevin Street and in 1897 there were over 900 students in attendance.

An extension to the original building was completed in 1901 but again by 1903/4 the Governors were reporting that "hundreds" had to be refused admission. Eventually the situation resulted among other things, in the acquisition of No. 12 Rutland (now Parnell) Square for Commercial Classes, and the construction (1908-10) of another School building in Bolton Street to relieve the pressure. These have since become the School of Commerce and Retail Distribution, and the College of Technology, Bolton Street, respectively, and what remained in the Kevin Street premises determined the subsequent character of our activities, viz., courses in the Sciences, in Para-Medical Work, in Electrical Engineering, and in Telecommunications and Electronics (a Radio Officers course was in operation at least as early as 1918).

With the introduction of the Vocational Education Act of 1930, the Technical Institute, Kevin Street, together with its offspring in Bolton Street, and Parnell Square came under the City of Dublin Vocational Education Committee, and the development of Vocational Schools around the city prevented a recurrence of the old accommodation problem although a minor extension was necessary in 1944. After the war, however, things changed and in the early 1950's it was clear that an unprecedented expansion in demand for technical education was on the way. Between 1956 and 1962 the plans were made for the present building which was finally completed in 1968. In the following year we acquired additional premises in Pleasant Street to house classes for Electrical Apprentices.

## Departments:

The College is organised in seven departments as follows:

Over/

Department of Mathematics:

This Department provides courses for the B.Sc.(London) degree specialising in Mathematics and Statistics. The Department also provides courses in Mathematics at trade, technician and professional levels for most courses in the College and these courses, while exhibiting a common core of mathematics at each level, have syllabuses designed with the interests of the particular students in mind and with a view to solving their problems in their special fields of study.

The Head of the Department is J. M. Forde, B.E.

Department of Physics:

The Physics Department occupies most of the first floor of the building and caters for all instruction in physics and general science in the College. It also has responsibility for courses in Photography and for administrative purposes courses for Opticians are grouped with this department also. The Department is deeply involved in the B.Sc.(London) courses and the course for the Graduateship of the Institute of Physics.

The Head of the Department is J. K. Taaffe, M.Sc., A.Inst.P., H.Dip.Ed.(Hons).

Department of Chemistry and Biology:

This Department is situated on the second and third floors of the College. It provides courses over a wide range of subjects, covering the requirements of the University of London B.Sc. in Chemistry as well as the requirements for highly skilled technicians for science-based industries.

The College is a national training centre for Medical Laboratory Technology, and the Department of Chemistry and Biology is responsible for this work, in connection with which a wide range of subjects is taught, including microbiology, haematology, blood-transfusion, clinical chemistry and histopathology.

The main emphasis in teaching is on the application of the sciences to practical problems in industry and medicine.

The Head of the Department is E. J. Rothery, B.Sc., F.R.I.C., F.I.C.I., M.I.Biol.I.

Department of Electrical Engineering:

This Department caters for Electrical Engineering, particularly heavy current work, at Professional, Technician Engineering, and Technician level. The Department also deals with Control Systems engineering. The Electrical Machines Laboratory is particularly well equipped.

The Head of the Department is T. Short, C.Eng., M.I.E.E.

Department of Telecommunications Engineering:

The Telecommunications Engineering Department is concerned with providing courses and teaching services covering the fields of electronic and communication engineering at technician, higher technician, graduate and post-graduate levels.

Technician and higher technician level courses constitute a major part of the work in the department.

In addition to general electronics laboratories, specialised facilities are provided in the following subject areas: television engineering, communication engineering, microwave and radar engineering and electronic measurements. Provision is also made for specialised study in the field of Marine Radio and Radar.

The Head of the Department is B. J. O'Connor, C.Eng., M.I.E.R.E.

#### Department of General Studies:

The Department of General Studies provides, to all other Departments, classes in Economics, Management and Industrial Studies, the Use of English and Communication Studies, and Modern Languages. Emphasis is placed, in all subjects, on their functional relevance to the Technician, the Scientist and the Technologist but the main objectives of the Department of General Studies are to encourage the student to think for himself, to develop breadth of outlook, flexibility of mind and critical judgement.

In teaching languages modern methods - Audio Visual Teaching and Language Laboratory Practice - are used almost exclusively. Students may pursue to an advanced level a language already studied at school or begin a new language.

In addition the Department of General Studies provides specialist lectures in selected aspects of the Liberal Arts, such as Music, Film, Literature, Communication.

The Acting Head of the Department is Miss K. M. Tierney, M.A.

#### Department of Electrical Installation Work:

This Department provides courses of education for apprentices and other personnel engaged in the electrical industry. The courses range from evening courses requiring attendance on three evenings per week to full-time courses covering a three year period. The Department is at present large located in the Pleasant Street premises.

The Head of the Department is L. Trundle, F.T.C.(E.E.P.)C.& G.

#### Chaplains:

There are six Chaplains in the College - four Catholic, one Church of Ireland and one Presbyterian. Their primary concern is the spiritual and moral welfare of the students. This they do by meeting the students in class-rooms as priest-teachers and elsewhere as counsellors or spiritual advisors. They organise seminars and help develop such College activities as would contribute to the wider education of the student.

#### Courses:

The College offers a wide variety of courses but these may be grouped under three general headings: Courses in the Sciences (Mathematics, Physics, Chemistry, Biology, Para-Medical Sciences); Courses in Electrical and Electronic Engineering (Telecommunications, Radar, Electric Power, etc.); and Trade Apprentice Courses.

The College is, of course, a teaching institution and our courses are conducted through the medium of lectures, tutorials, laboratory work, and workshop activities, as the subject matter requires. Our classes, generally speaking, consist of groups of not more than twenty students, thus encouraging the development of a good student/teacher relationship. Almost all our day courses contain some non-technical studies, e.g. in foreign languages, in economics, current

affairs, etc. In this way we try to ensure that even in the highly technical nature of the bulk of our work a balance is maintained in the education we give our students.

It is always our intention to provide courses which will give the maximum opportunity to all those who might wish to avail of them and for this reason we provide courses in many different forms. We have, for example, whole-time courses, part-time courses, block release courses (i.e. a block of whole-time attendance for from six to sixteen weeks each year), and evening courses. We also cover many different levels, from apprentice level courses to courses of full degree level - and beyond. We are, for example, co-operating with Trinity College in conducting a M.Sc. Course in Applied Electronics. The College is also recognised as an institution in which research may be undertaken for the purposes of the M.Sc. in electrical engineering from the University of Salford. Graduates of our own Diploma Course in Electrical Engineering with Honours Grade I or Grade II are, of course, eligible for admission to these M.Sc. programmes.

Our courses undergo continuous development and modification as technology and the demands of industry develop.

#### Admission to Courses:

Students for all science and engineering courses must undergo a suitability test and an interview as well as satisfying the academic requirements for admission. Success in the suitability test is necessary before we would admit an applicant. The courses for the B.Sc.(London) and the Diploma Course in Electrical Engineering are both recognised for the purposes of the Local Authorities Higher Education Grant Scheme. For other whole-time courses certain scholarships are also available.

#### Facilities:

The College laboratories and workshops are reasonably well equipped and capable of excellent work. The equipment is modern and, so far as we have been able to make it so, representative of the best technical practice. We have a fourth generation computer and further technical equipment is still being acquired.

The College also has other facilities which taken all together make it an unique institution e.g. our lecture theatres, wired for the display of broadcast and closed circuit television; the Physical Education Unit with its Gymnasium and Swimming Pool; the Language Laboratory for the most modern methods of language instruction. The Library has a growing collection of books (about 4000 volumes at present) and technical journals (over 150 general and technical journals are taken); the reading room can seat 110 persons. Finally, there is a Canteen where as well as the usual tea and coffee, hot meals are served at mid-day and in the evening; and there are staff and student Common Rooms.

#### Students:

The current annual enrolment in courses in the College is about 2700, and of these about 2000 are enrolled in day classes of one sort or another. All students on enrolment become members of the Students' Union and one of their number is a member of the College Council. The Union is administered by students elected by and from the student body.

Research:

The release of members of the teaching staff who are Higher Technological teachers from some of their teaching duties to undertake approved research has been permitted by the Department of Education "on a trial basis for one year only" since 1967. Not unnaturally research in the College has grown slowly, largely because of a long-standing difficulty in acquiring staff, but partly because of the lack of a research tradition in the College and a lack of experience of many members of the staff in this kind of activity.

In the last three years or so the College has expanded its staff very considerably and has been able to recruit people with research experience in many instances. Many of these still continue the work they had been engaged in prior to their recruitment, sometimes in collaboration with others in Universities or other institutions and often with a view to obtaining a higher degree. In a few instances the projects in which some members of the staff are currently involved have been proposed by the Institute of Industrial Research and Standards. In general it would be the policy of the College to develop research activities of this sort, on behalf of the Institute of Industrial Research and Standards or on behalf of industrial or public service concerns, and in problems having a practical application. In current circumstances the College encourages any reasonable research activity on the part of its Higher Technological Staff even if the fields of enquiry are in some cases rather remote, in order to generate and build up feeling and an atmosphere for research.

The following is a list of projects on which various members of the Departments of the College are at present engaged which can be classified under the general heading of research:

Department of Mathematics:

- (a) Analysis of dielectric properties that would cause overlap in the frequency shift of normal modes in a cavity resonator;
- (b) Statistical models for industrial forecasting and control;
- (c) Study of nonlinear interaction of two light beams.

Department of Physics:

- (a) Elementary particle research in association with the European K<sup>-</sup> Collaboration;
- (b) Laser and flash photolysis of liquid and polymer solutions of organic dyes;
- (c) Development of a large vacuum aluminising plant;
- (d) Deposition and analysis of thin dielectric films;
- (e) Investigation of variation with temperature of the refractive index of crystals;
- (f) Development of a high-power CO<sub>2</sub> laser;
- (g) Development of holographic techniques for the examination of glass and dielectric materials, and of thin metal and dielectric films;
- (h) Techniques for measurement of gaseous ion mobility;
- (i) Science teaching in Post-Primary schools.

Department of Chemistry and Biology:

- (a) Research on Indigoid Dyes;
- (b) Studies on the practical applications of Iodinated Benzoic Acid Esters;
- (c) The structure of molecules from Infrared and Ultraviolet spectroscopic investigations;
- (d) Study of ergotism in farm animals;

- (e) Investigations into the production of colour centres by electrolysis in alkali halides;
- (f) Development and testing of a "Trim Cell Turbidometer";
- (g) A study of the complexing properties cyclopropenes;
- (h) The synthesis and biological activity of vinyl ether analogues of acetyl choline;
- (i) Rapid methods of cholesterol level estimation (in collaboration with the Institute of Industrial Research and Standards).

Department of Electrical Engineering:

- (a) Research on properties and measurements on dielectrics;
- (b) Research on problems associated with the generation of harmonics in high-voltage AC/DC/AC transmission systems;
- (c) Research on medical applications of electronics (in collaboration with the Institute of Industrial Research and Standards);
- (d) Research on precision measurements using a.c. current comparator and transformer ratio methods.

Department of General Studies:

- (a) Estimation of direct and cross-price elasticities of supply for the main agricultural commodities produced in Ireland with reference to seven regions;
- (b) A schools-based investigation into modern methods of teaching French in post-primary schools in Ireland.

Department of Telecommunications Engineering:

- (a) Investigation of the mechanism and application of acoustoelectric instabilities in piezoelectric semiconductors;
- (b) Applications of sequential-scan comparison techniques to high-speed inspection processes;
- (c) Development of a wide-range semiconductor device characteristic measurement and display apparatus;
- (d) Development of a digital logic tutor in conjunction with course development in the theory and applications of digital logic techniques;
- (e) Development of a video display terminal to operate in point-function display mode or in alpha-numeric display mode with applications to computer and T.V. data;
- (f) Investigation and development of techniques for the manipulation and minimisation of Boolean functions, taking into account the limitations imposed by device technology.