reston Polytechnic

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Full-time and Sandwich Courses

1975/76

Preston Polytechnic

Corporation Street, Preston PR1 2TQ (0772-51831)

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Although every care has been taken to ensure that the information contained in this Prospectus is accurate at the time of printing it must be understood that changed circumstances may necessitate cancellation of courses or alterations in the programme of courses, course content, fees and other matters dealt with. The Polytechnic cannot undertake to give notice of such cancellations or alterations, and cannot accept any liability arising out of or in connection with them.

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45 Ordinary National Diploma in Technology/Engineering
56 B.Sc. (C.N.A.A.) in Mechanical Engineering
57 Polytechnic Diploma in Mechanical Engineering
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44 Council of Engineering Institutions Part 2 Examinations

Languages

47 R.S.A. Diploma for Bilingual Secretaries and/or Personal Assistants
48 R.S.A. Certificate for Bilingual Secretaries and Diploma for Personal Assistants

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70 B.A. Honours in Psychology

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34 Graduate Membership of the Royal Institute of Chemistry (four-year)
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75 Health Visitor's Certificate

Teaching

48 Teacher's Certificate of the University of Lancaster.

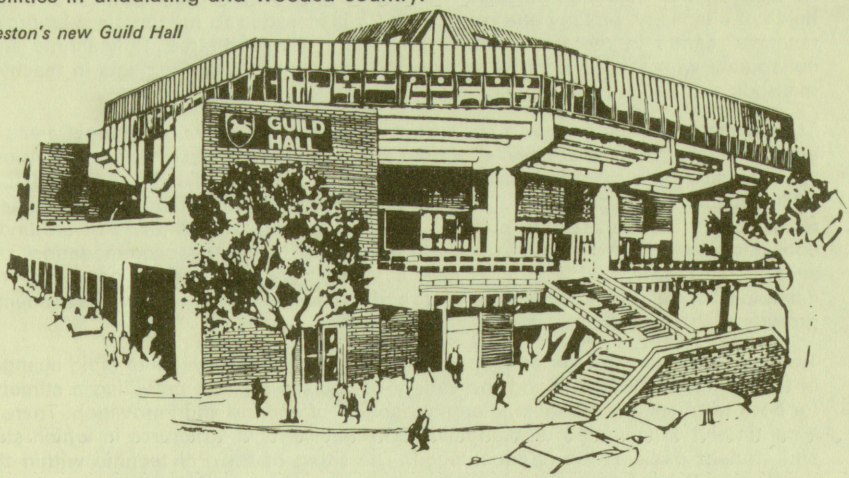
Preston and the Surrounding Countryside

Situated on the banks of the Ribble and on the London and Midlands to Scotland railway route, Preston is the centre of a network of communications. Being midway between the capitals of England and Scotland it was often in the past visited by royal and distinguished persons (not always welcome!) in their progress north and south. The M6 motorway now passes through, linking Preston with the industrial Midlands and London and with the Lake District. Eventually there will be a motorway link with Scotland. London can be reached in less than 3 hours by rail.

Within the town, and its immediate surroundings in Lancashire, is a wide range of industrial and commercial interests, and the headquarters of many firms with national and international reputations. Among the many important industries centred on the town are heavy and precision engineering, the manufacture of aircraft, heavy commercial vehicles and cars, printing presses, chemicals, electrical equipment, synthetic fibres, paper and footwear. On the outskirts is the uranium plant of British Nuclear Fuels, supplying fuel elements for nuclear reactors. Preston is a port of considerable significance and in 1948 instituted the first commercial roll-on/roll-off service in this country.

In spite of its industrial significance Preston is surrounded by some of the most beautiful open countryside in Lancashire. About 15 miles to the west are several fine coastal resorts, the best known of these being Blackpool. Less than 50 miles to the north is the heart of the renowned and beautiful Lake District. The Trough of Bowland and the Bleasdale and Longridge Fells lie nearby, providing rambling facilities in undulating and wooded country.

Preston's new Guild Hall



Regular concerts are given in the town's Guild Hall by the Hallé and Royal Liverpool Philharmonic Orchestras. Other recent presentations have included folk concerts, Gilbert and Sullivan operas, a rock and roll concert, presentations of film theme music and music by the Strauss family, and the appearance of such artists as Gilbert O'Sullivan, Nana Mouskouri, The Spinners, Ralph McTell and many others.

Preston Polytechnic

The Preston Polytechnic is the latest of 30 new institutions of higher education in England and Wales to be established as a result of the Government's White Paper of 1966 'A Plan for Polytechnics and Other Colleges'. It has evolved from the Harris College, a major college in the North West serving North Lancashire, neighbouring Counties and County Boroughs and areas further afield.

Traditionally, the Harris College provided vocationally orientated courses for over a hundred years, going back indeed to the time of the Mechanics Institutes and widening the spectrum as new technologies have emerged or in response to the demands of industry and society generally. This emphasis on applied studies provides for many students a desirable and more acceptable alternative to studies in the more academically orientated institutions. It provides education in a wide variety of disciplines in full-time, sandwich and part-time courses. Short courses on specialist or advanced topics are arranged regularly in all departments of the Polytechnic. In its new role as the Preston Polytechnic it is intended to widen the range of these courses to meet the needs of the region, with particular reference to the requirements of industry, commerce and the professions, in which fields the Polytechnic has the capacity to make valuable contributions in the specialist areas of research, consultancy and design.

An important objective is to strengthen the existing links between the Polytechnic, schools and industry and an Educational Liaison Officer has recently been appointed to assist in this purpose. Teachers' Centres operate within the Polytechnic in the fields of chemistry, biology and physics and it is intended to inaugurate a language teachers' centre in the very near future. Within these centres, Polytechnic staff collaborate with school teachers to examine and explore developments in teaching methods and educational technology.

The present premises occupy a site of approximately 9.5 acres. Additional areas of approximately 25 acres are available now and 13 acres for expansion in the future. An extensive physical development programme is planned and it is hoped that in 1974 building will commence on additional teaching accommodation, student residences, a Students' Union building and a new library. Plans for 1975 are under consideration and are likely to include additional teaching accommodation and student residences, and a start on new administrative and catering premises. This development will continue for some years and its pace increase to match the academic growth of the Polytechnic.

The increasing demand for higher education has led in recent years to rapid changes in the number of students and the variety of courses offered, providing a stimulus for both teachers and students in an atmosphere of change and innovation. There is a continuing examination of academic and organisational structures in which staff and student participation is encouraged. The siting of the Polytechnic within the developing Central Lancashire new town ensures that it will develop in sympathy with the needs and desires of society generally.

The Polytechnic currently houses some 1,000 full-time students (700 male, 300 female) and 2,000 part-time students. The majority of the courses have been transferred to the W. R. Tuson College of Further Education now being built on the outskirts

of Preston. Long-term development of the Polytechnic envisages a progressive expansion to 5,000 full-time equivalent students, reaching about 2,800 by 1976-77 and 4,900 by 1981-82.

There are eleven teaching departments in the Polytechnic, namely the School of Art and Design, the Departments of Business and Administration, Construction and Urban Studies, Chemistry and Biology, Electrical and Electronic Engineering, Language, Humanities and Special Education, Management, Mathematics and Computer Studies, Mechanical and Production Engineering, Physics and Social Studies. The academic structure of the Polytechnic is at present under review.

All departments are newly housed, and an excellently designed administrative and communal block includes a combined lecture hall and theatre, a recreation hall, student common rooms, library and refectory. A further extension provides additional facilities for advanced work in science and engineering, including lecture theatres and a computer suite housing an I.C.L. 1901A computer. Laboratories, workshops, drawing offices and studios are well equipped and up-to-date and staffed by well qualified and experienced teams of technicians. Additional equipment is acquired annually to ensure that the high standard of facilities is maintained.

Social and sporting activities are promoted through clubs and societies in the Polytechnic affiliated to the Students' Union. The development of music and drama is fostered. The Recreation Hall enables the pursuit of a wide range of activities.

Lancastrian School of Management

The Lancastrian School of Management was established on the 1st June, 1974. It draws together into one administrative unit the management teaching resources of the Polytechnic and Colleges of Further Education in the new Lancashire area. Its aim is to work in partnership with industry to provide comprehensive management training programmes.

Within the newly formed School are strong functional management teams and a wide range of management services. Organisations and firms wishing to undertake management development programmes may take advantage of the numerous courses already offered or, with the School, may design specific courses to meet their individual needs. Such specially designed courses may make use of integrated training teams drawn both from the School and the Company and, if appropriate, courses may be located within the Company's own premises.

The School operates a residential management centre at Heskin Hall, a 16th Century Manor House near Eccleston, Chorley. The Hall offers excellent residential, lecturing and seminar accommodation and full catering services are provided.

Details of the services and facilities available including courses and consultancy may be obtained from E. K. Langham, B.Sc. (Econ), A.M.I.MechE., F.I.Prod.E., Head of the Lancastrian School of Management, Preston Polytechnic, Corporation Street, Preston PR1 2TQ.

Governance of the Polytechnic

The legal responsibilities of the several agencies involved in the establishment, governance and operation of the Polytechnic are detailed in the *Instrument of Government* and the *Articles of Government* approved by the Secretary of State for Education and Science. Copies of these documents are deposited in the Polytechnic Library and may be seen on request.

The provision of the Polytechnic is the responsibility of the Lancashire Education Authority.

The governing body of the Polytechnic is the *Polytechnic Council* which has responsibility for "the general direction of the Polytechnic". It has a membership of 34, including members appointed by Local Education Authorities; the University of Lancaster, the Manchester and Liverpool Polytechnics and teachers' unions; co-opted members from industry, commerce and the professions; and Polytechnic staff and students.

Subject to the overall responsibilities of the Polytechnic Council the *Director* is responsible for "the internal organisation, management and discipline of the Polytechnic", and the *Academic Board*, under the Chairmanship of the *Director*, for "the planning, co-ordination, development and oversight of the academic work of the Polytechnic". The Board is composed of senior academic and administrative officers, members appointed by and from the full-time teaching staff, members appointed by the Students' Union, and co-opted members.

Membership of the Polytechnic Council and Academic Board is currently under review.

Student Services

Educational Liaison Officer: G. A. Redhead, BSc
Student Counsellor: Miss F. Higgins, MA
Polytechnic Lodgings Officers: Mrs P. M. Cross and Mrs P. Ryan
Polytechnic Doctor: Dr N. F. Leigh, BA, MB, BChir, MRCGP

Student Welfare

The difficulties which a student can experience are those facing society generally and those which are particular to a student body, such as worries which may arise from unfamiliar living conditions, financial or domestic problems and study.

Each full-time and sandwich course student will be assigned a personal tutor, and it is to this person that a student may turn if he feels in need of advice of a personal kind. Personal tutors are academic members of staff of the student's own Department. They have a special interest in the general welfare and progress of the students in their groups and have a fair idea of the problems likely to arise. Students are advised to see their personal tutors if they have problems of any kind.

The Student Counsellor is willing to advise or help students and, if necessary, make contact on their behalf with any of the various health or welfare agencies which exist in Preston. Her services are complementary to the personal tutorial system, but students are free to approach her directly.

Every kind of problem may in the first place be discussed with the Counsellor although many students may not require any practical help other than simple advice or information. It is emphasised that her assistance is confidential. She may consult others if she feels their knowledge will be helpful but the identity of the student will not normally be revealed to others without the consent of the student.

Student Health

Students who will be living locally in lodgings are advised to bring their National Health Medical Cards with them and register with the Polytechnic Doctor. It is recommended that the landlady be told the name of the doctor so that she may call him on the student's behalf if necessary.

The Polytechnic Doctor is available in the Polytechnic on Mondays, Wednesdays and Fridays in term-time from 12 noon to 1.00 pm.

Students should not attend the Polytechnic from a house in which there is infectious illness. Cases should be reported promptly to the Student Counsellor.

Student Lodgings

The Polytechnic Lodgings Officers will do all they can to help students to find accommodation and they prepare each year a register of house-holders and hotel keepers who are willing to offer lodging accommodation. They initially approve and thereafter inspect all registered accommodation.

Accommodation is available in Preston and surrounding districts, but some students may have to be accommodated some distance from the Polytechnic. Priority will be given to students whose homes are beyond the range of daily travelling to the Polytechnic. Students who are grant-aided will generally be assisted by their supporting Local Education Authorities if their necessary travelling expenses exceed the amount included in the grant. Intending students should write to the Polytechnic Lodgings Officers as soon as they receive confirmation of their acceptance into a course. Leaflets giving guidance to students who are living away from home are available.

Services Offered to Schools and Industry

Schools Advisory Service

Pupils at school frequently need information and advice about courses available at Polytechnics generally, and one of the functions of the Educational Liaison Officer is to assist the careers staff of Secondary Schools and other institutions in this respect. Another of his functions is to establish and maintain personal contacts between the staff of schools and their colleagues in the Preston Polytechnic.

Visits of groups of Fifth and Sixth Form pupils to the Polytechnic are welcomed. Alternatively, staff of the Polytechnic will gladly visit schools to talk about courses and life in the Polytechnics, or to lecture on their own specialist subjects. Careers staff are invited to contact the Educational Liaison Officer to discuss suitable arrangements.

Service to Employers and Employees

Employers or employees who require information and advice about Polytechnic courses should contact the Educational Liaison Officer, one of whose functions is to provide a link between the management of commercial and industrial establishments and staff of the Polytechnic. Employers are encouraged to make known their views of possible courses whenever they feel the Polytechnic can be of service.

The Educational Liaison Officer will be pleased to arrange visits by employers to the Polytechnic to meet staff and see the available facilities. These include equipment used in advanced teaching and research which may be made available to industry in certain circumstances. The Polytechnic will be happy to assist in the solution of technical problems. Additionally, employers may wish to collaborate in student projects or to offer sandwich course placements. The Educational Liaison Officer will be pleased to visit companies at any time for discussions.

The Library

Librarian: J. R. Edgar, MA, FLA



It is the aim of the library to provide a first-class stock and service to meet the needs of all its users, in learning, teaching and research, and to make some provision for general interests.

It has a rapidly growing collection of books and periodicals, reports, pamphlets, standards, abstracts, indexes, and microforms, and the stock is supplemented by interloan facilities with other libraries. It is planned to develop the library as a learning resources centre, to provide audio-visual materials and facilities for their use.

The main library occupies a central position in the Polytechnic and provides 250 seats for readers. There is also a sectional library in Marshall House with seats for 75 readers. A new library is being planned and work on its design is in progress.

In addition to the provision of study, reference and reading facilities, the library lends books, and also provides a photocopying service at a small charge.

The library also acts as an information and reference centre for its users and for local industry and commerce, and students are encouraged to use the library regularly and to consult the library staff both for guidance in their reading and for help in finding further information.

The library opening hours are Monday to Thursday, 0900-2100 hours, Friday, 0900-2000 hours, during terms; and 0900-1730 hours during the vacations.

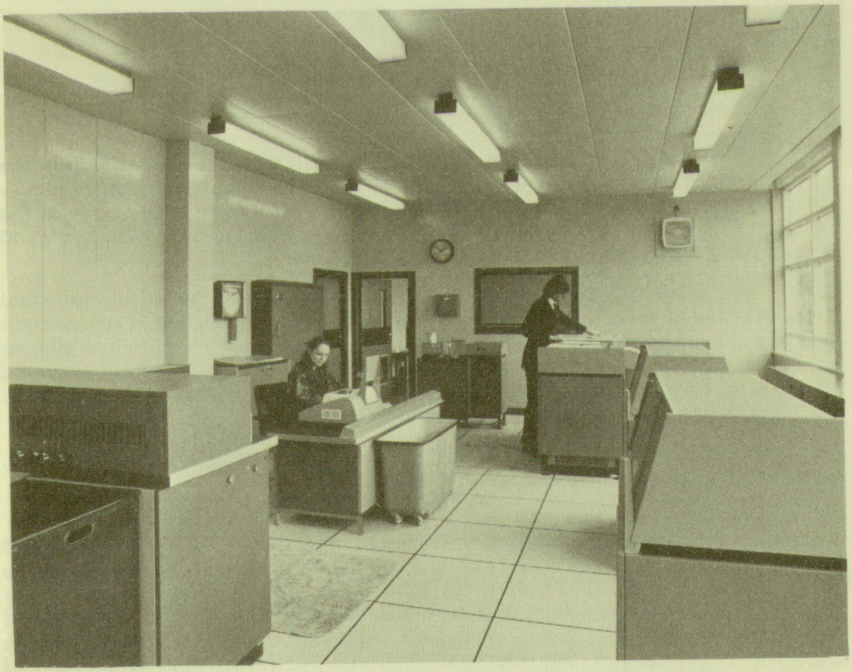
A "Guide to the Library" which describes the library services is available to all students.

Computing Services Unit

Head of Computing Services: D. W. Walsh, MSc, MBCS

The Polytechnic's main computer unit, an ICL 1901A system, together with equipment for the preparation and transmission of data in a form which can be read by the computer, are housed in a specially designed suite of rooms. On-line computing facilities are expected to be available in the near future. In addition, Departments in science and technology possess smaller special purpose computers for use in the advanced teaching and research projects carried on within the Departments. The Polytechnic collaborates with local schools and colleges in introducing modern computing methods and terminal links have been installed for this purpose.

The Computer Room



Computer appreciation and programming is taught in all advanced courses which require these modern techniques. Short courses in various computer languages, and more extensive courses in data processing and systems analysis, are arranged throughout the session. Increasing demands are being made on the computer for research and consultancy work undertaken by the teaching staff of the Polytechnic. The computer will eventually be used as the focal point of specialist degree and diploma courses in computer studies. The Head of Computing Services will be pleased to give advice to representatives of industrial or commercial undertakings who may be considering the use of a computer for their own needs.

Students' Union

Telephone: 0772-53852

The Union is governed and organised by students of the Polytechnic and is affiliated to the National Union of Students. The supreme governing body of the Union is the General Meeting at which matters of policy are decided. Control over day-to-day business and administration is the responsibility of the Students' Union Council acting through an Executive Committee. Execution of Union policy is the responsibility of the sabbatical President, other Principal Officers, Committee Chairmen and a salaried Secretary.

Officers of the Union 1974-75

President: Nadia Babilla
Internal Vice-President: Paul Wojciecowski
External Vice-President: John Davies
Treasurer: Maurice Owen-Roberts
Secretary: Pat Jolly

The Union arranges general social activities, offers financial and other help in the formation of student societies, and maintains contact with students in other educational institutions. It is financed mainly by a grant from the governing body of the Polytechnic, income from services and functions organised by the Union itself, and other sundry income.

All students other than those enrolled in special courses are automatically admitted to membership of the Students' Union. Membership cards will be issued at enrolment entitling students to participate in all social activities, to join any student club or society and to vote in elections, including the election of two student members to the Polytechnic Council. Union meetings and other activities, including the holding of elections, operate under the Students' Union Constitution.

The Union retains the services of a local firm of Solicitors and, through the Union, students may obtain initial advice on legal matters.

All student Clubs and Societies in the Polytechnic are affiliated to the Students' Union and special subscriptions may be required for membership of some clubs and societies. Dances and other social events are arranged in the Polytechnic and in the town. Various recreational facilities are available by arrangement with the Senior Lecturer in Physical Recreation. A Students' Union Handbook, published and issued free by the Union, describes the facilities offered by the Union and details in full the Students' Union Constitution. It is obtainable from the Union Office or from any of the Principal Officers. All enquiries concerning student activities should be addressed to the Secretary, Preston Polytechnic Students' Union, Corporation Street, Preston, PR1 2TQ.

Union Premises

A Common Room and Offices, allocated exclusively for student use, are located in the communal block of the main Polytechnic premises, where the Union Secretary and Principal Officers of the Union may be contacted.

Plans have been produced for a new Union Building, to be sited near the centre of the extended Polytechnic campus, and this will contain offices, lounges, games rooms, bars and a large specially designed area for films, theatre, formal dinners and other functions. This building will be included in the first phase of the physical development of the Polytechnic and it is hoped that building will commence in 1974.

The National Union of Students

This is the national organisation representing some 700,000 students in 700 educational institutions of all kinds and sizes. It has a permanent staff and offices and negotiates with the Department of Education and Science on behalf of students both collectively and individually. It is an effective source of information on all aspects of student life, and will deal with student problems individually or through the Union Officers within their particular institutions. Facilities offered include insurance cover of all kinds at favourable rates, special travel facilities including travel abroad, and special discounts available at shops and stores. Students requiring information or advice on these and other matters should contact the External Vice-President.

Grants

Students ordinarily resident in the United Kingdom and admitted to advanced full-time and sandwich courses in Polytechnics are eligible for Local Authority awards. There are two categories: (a) *mandatory,* for courses such as first degree or Dip. A.D., and (b) *discretionary,* for courses such as H.N.D. and professional courses.

Grants are assessed according to the financial position of the student, taking account of parental income and other circumstances. Certain students qualify for independent status and in these cases parental income is not taken into consideration. Normally, grants cover the cost of tuition fees (this payment is generally made direct to the Polytechnic), a maintenance allowance, an allowance for books and materials, a travelling expenses allowance and examination fees. Continuation of grant is dependent upon satisfactory progress reports from the Polytechnic at the end of each academic term or year. Students not supported by Local Authority grants are personally responsible for the payment of all Polytechnic fees.

Grants may also be available for students on non-advanced courses. Generally, these will cover the cost of tuition and examination fees, travelling expenses and an allowance for books and materials.

It is the students' own responsibility to make application for a grant to the Local Education Authority of the County or Metropolitan District within whose area he permanently resides. These grants are not normally available to overseas students.

Applications for grants should be made to the Chief Education Officer of the Local Education Authority in whose area the student lives. Early application is desirable and students should note that grant cheques do not always arrive at the beginning of term, especially in the Autumn term. They should therefore bring with them at the beginning of each term enough money (preferably in a bank account) to pay for lodgings, food, travelling and other expenses for a month or so.

The following are useful sources of detailed information about student grants. Copies can be seen in the Polytechnic Library.

Grants to Students Pamphlet No. 1. Issued by the Department of Education and Science and obtainable from Local Education Authorities. Applies to applicants normally resident in England and Wales.

Guide to Students Allowances. Issued by and available from the Scottish Education Department, Awards Branch, 2 South Charlotte Street, Edinburgh EH2 4AP.

Grants Handbook. Published by the National Union of Students, 3 Endsleigh Street, London WC1 0DU, price 90p including postage. A particularly useful handbook on discretionary award problems.

Educational Charities. Published by the National Union of Students, price 20p including postage. This lists trust funds that are able to make relatively small grants to students in need.

School of Art and Design

Head of School: T. Metcalfe, ARCA, ASIA

Principal Lecturer

L. Penrice, ARCA

Senior Lecturers

J. W. Bailey, DFA
A. J. S. Brook, AIIP
D. M. Glen, ASIA
D. Q. King, BFA (Carnegie Institute of Tech)
Mrs M. G. Stockdale DesRCA

Lecturers

D. F. Bates, ARCA
R. E. Bray
Mrs V. Gray, BA
I. Harrow, BA
K. D. Hicks, ARCA
G. F. Hollingworth
J. S. Lane, BA
P. Lees, MA DipAD
B. Midgley, DipAD, HDA
G. R. Parry
A. D. Powell, CertRAS
S. I. Reid, BA
D. H. Roberts
I. T. Sharp
A. H. Thompson, ARCA
Mrs J. M. Thompson, DesRCA

The School of Art and Design

The School is one of the 42 centres in England and Wales approved by the Council for National Academic Awards to offer courses leading to the degree of B.A. with Honours.

For a number of years the School was chiefly concerned with preparing students for employment as designers in industry, though a concern with Fine Art was maintained through Foundation Courses in Art and Design staffed by practising painters, sculptors and print-makers. However, from September 1974 the School will be offering B.A. (Honours) courses in Fashion, Fine Art and Graphic Design as well as a Foundation Course for students who are not less than 17 years of age at entry. The courses in Design (Fashion and Graphics) enable students to develop personal creative talents and a good understanding of industrial and commercial processes, the latter being in part dependent upon the close and fruitful relations with industry that members of the design staff have established over a number of years. The course in Fine Art provides opportunity for fundamental studies cutting across the boundaries

of the specialist design areas. It provides a basis for the practice of art, for teaching in schools of general education, and for subsequent specialisation in a wide range of activities to which a broad competence in, and understanding of, the visual arts are appropriate. With the establishment of the three B.A. courses it has been possible to introduce advanced studies in the history and philosophy of art and design which contribute to students' ability to work successfully in increasingly complex fields, as well as to their general intellectual development.

There are good facilities within the School for small-scale production using industrial techniques in a number of fields (eg photography, letterpress and lithographic printing, garment production and industrial design) and these, together with facilities for the practice of fine art in two and three dimensions, are constantly being extended as new needs and new technical processes emerge.

The School also offers a wide range of adult non-vocational courses in art and crafts.

CNAA degree of Bachelor of Arts (B.A.) with Honours

The institution previously responsible for awarding the Diploma in Art and Design was the National Council for Diplomas in Art and Design. From the 1st September, 1974, this institution amalgamated with the Council for National Academic Awards (the CNAA), and the combined bodies will operate under the title Council for National Academic Awards. The courses detailed below will therefore lead to the award of the CNAA degree of Bachelor of Arts (B.A.) with Honours.

Qualifications for entry

Applicants must have reached the age of 18 before entry to the course, and must be able to show evidence of high potential creative ability. They must satisfy the Council's requirements in respect of general educational standards by possessing a General Certificate of Education in:

(a) five subjects at 'O' level; or

(b) three subjects at 'O' level and one other subject at 'A' level; or

(c) two subjects at 'O' level and two other subjects at 'A' level; or

(d) three subjects at 'A' level provided there is evidence that other subjects have been studied.

At least three of the five 'O' level passes, or the equivalent in terms of 'O' and 'A' level passes, should be in academic subjects and at least one should be in a subject providing evidence of a student's ability to use English. A grade 1 pass in the Certificate of Secondary Education will be accepted as the equivalent of a pass in the General Certificate of Education at Ordinary level.

Applicants seeking entry under (a) or (b) above will, in addition, normally be required to have completed a full-time foundation course in Art and Design lasting not less than one year. In exceptional cases, the Council will consider the admission of an applicant who has not undertaken a foundation course.

The Council recognises that there may always be a small number of students of marked creative promise who are capable of taking a degree course in Art and Design, including Complementary Studies and the History of Art/Design, but who have not obtained the minimum educational qualifications. The Council will be prepared to

consider recommendations from colleges for the admission to their courses of such students on their individual merits. The Council, however, wishes to emphasise the need to confine acceptance under the terms of this paragraph to students of exceptional talent.

Admission procedure: forms APP1 and APP2 may be obtained from Art and Design Admissions Registry, 16 Albion Place, Maidstone, Kent ME14 5DZ, by the Head of the applicant's school or college. (*Note:* forms will *not* be supplied directly to individual applicants and are usually issued to Heads of Schools or Colleges in January). Preliminary enquiries may be made directly to the Head of the School of Art and Design of the Preston Polytechnic.

B. A. in Fashion (A1) (DES2711)

Course Adviser: Mrs M. G. Stockdale

A four-year sandwich course, offered for the first time in September 1974, leading to the B.A. (Honours) on which students spend approximately three months in industry towards the end of the second and third years of the course, gaining about six months of industrial experience overall.

The course enables students to develop a personal design sense, as well as a thorough knowledge of the techniques of clothing manufacture and other production and marketing factors. The course also provides a grounding in the perspectives, data and techniques of sociology, which helps students to understand the cultural roots of fashion, and a background in the history, philosophy and appreciation of the visual and other arts.

The most immediate practical aim of the course is to prepare students for professional designers' roles in the fashion industry, and students are therefore encouraged to develop original creative abilities which are informed by a knowledge and appreciation of the arts and of the role of fashion in society. Equally, students are encouraged and enabled to regard industrial production processes, and commercial organisations, as the media in which their creative ideas are to be realised.

The many manufacturers whom we have consulted agree that a sandwich course of this kind is ideally suited to the education of designers intending to work in industry, and a great many organisations have agreed to continue their support by offering industrial training facilities to our students.

1st Year. *Tutor:* Mrs J. M. Thompson. *Curriculum:* fashion design, related design studies; fashion study; sociology; history of art and costume; pattern construction; production technology; drawing.

Course duration: September to July (35 weeks)

Examinations: internal

2nd Year. *Tutor:* Mr S. I. Reid. *Curriculum:* fashion design, textile design; fashion study; sociology; history of art and costume; pattern construction; knitting technology; business studies.

Course duration: September to May (28 weeks)

Examinations: internal

Polytechnic Diploma in Dress Design and Manufacture (A2) (DES3923)

Course Adviser: Mrs M. G. Stockdale

This course is being progressively replaced by the B.A. course in Fashion, and only the 3rd Year of the course will be offered in 1975/76.

3rd Year. *Tutor:* Mrs M. G. Stockdale, Mr S. I. Reid. *Curriculum:* fashion design, pattern construction, knitting technology, accessories, millinery or jewellery, specialist lectures, private study and tutorials.

Course duration: October to July (32 weeks)

Examinations: internal and L.S.I.A.

Qualifications: Polytechnic Diploma in Design, and the Licentiateship of the Society of Industrial Artists and Designers.

Careers in Fashion

During the last decade the United Kingdom has led the way to a fashion explosion, adding a new dimension to the fun of living, and enabling all levels of society to enjoy good clothing. It is the talented young British designers who set world trends in fashion. These young people, the great majority trained in schools of art and design, are in touch with contemporary trends not only in clothing but also in the arts generally.

In both the clothing and knitwear industries there are good career opportunities for lively, creative designers with a knowledge and appreciation of modern production and commercial processes. The clothing industry is strongly 'design intensive', which means that there are a great many career opportunities for both young men and young women designers which can lead to specialisation in other aspects of the industry such as buying, range co-ordination, and design management, all of which require imagination and an understanding of the fashion industry as a whole.

Manufacturers specialise in a particular type or range of garments, using either mass-production techniques to meet the ever-increasing demands for well-designed but inexpensive clothes, or small-scale production methods to meet the demand for clothes that are considerably more expensive. Equally, a company may specialise in the manufacture of 'young' fashion dresses, knitwear, children's wear, etc., and a designer may choose to specialise in any one of these fields. The fact that the industry is divided into a great many independent units further increases the demand for able designers and for senior staff with a thorough understanding of the industry, including its all-important design aspects.

B.A. in Fine Art (A1) (DES2705)

Course Adviser: J. W. Bailey

A three-year full-time course was offered for the first time in September, 1974, leading to the B.A. (Honours).

The course enables students to develop their awareness and understanding of Art, as well as their creative and manipulative skills, and to acquire adequate levels of scholarship in the history of art and other relevant topics. Studio and academic work together nurture a situation in which sensitive and intelligent value judgements precede a decision to pursue a topic in depth.

The course has been designed to allow a full integration of practical and theoretical work, and therefore certain areas of artistic endeavour have been selected for special study. These are regarded as convenient foci, the drawing of boundaries between intimately related themes being regarded as an educational means rather than as an end in itself.

Studio work cuts across craft boundaries, and whatever media, crafts and techniques are appropriate to the students' interpretations of the aims of the course are used in making paintings, drawings, prints, sculptures, constructions, films, photographs, etc. The course includes a chronological history of European art from c. 1500, in addition to historical studies more directly related to on-going studio work.

For the uncommitted student who has yet to find a personal line of enquiry, the structure of the course and the specific units of study contained within it offer a rich stimulus, and direct enquiry into areas which lead to a broad understanding of the visual arts while enabling each individual to discover his own potential. For the more positively oriented student who wishes to pursue individual lines of enquiry, studio projects offer a stimulating challenge and introduce topics that they might not otherwise have encountered.

1st Year. *Tutor:* A. D. Powell. *Curriculum:* studio work including topics from drawing, painting, three-dimensional design, photography, print-making and ciné; history of art; complementary studies.

Course duration: September to July (35 weeks)

Examinations: internal

2nd Year. *Curriculum:* continuation of studies listed in the 1st Year curriculum.

Course duration: September to July (35 weeks)

Examinations: internal

B.A. in Graphic Design (A1) (DES2706)

Course Adviser: Mr D. Glen

A four-year sandwich course leading to the award of a B.A. (Honours). Students spend approximately 10 terms in the Polytechnic and 2 terms in industry during the four years of the course.

Graphic design covers a wide range of activities and the course will prepare students for a variety of professional roles in many different kinds of organisation. Students may therefore select one of three options, each of which will enable them to acquire expertise in particular professional fields. A common philosophy, and the fact that much of the work is common to all students will, however, make it possible for successful students to move freely within the industry as a whole, particularly after some years of practical experience.

Option A (*General Graphic Design*) is intended for students whose chief interest is in image making, and who intend to work in advertising, promotions and television, as producers of educational and instructional graphics, or in any other field in which the capacity to visualise and produce effective images is of paramount importance.

Option B (*Typographic Design*) is intended for students chiefly interested in the analysis and solution of complex design problems involving the use of typographic,

photographic and other images. Those taking up Option B will, for the most part, find employment with publishing and printing houses, though some will work in advertising agencies, the promotions departments of manufacturing industries, etc.

Option C (*Three-dimensional Graphics*) is intended for students interested in structural and mechanical as well as graphic problems, and who wish to work in the field of product presentation and package design.

The aim of the course is to ensure that students acquire the capacity to analyse visual communication problems and propose imaginative solutions which acknowledge technical restraints, whilst making creative use of traditional and newly-discovered technical possibilities. Students will acquire a sufficiently thorough grasp of current techniques, and the principles that underlie them, for new developments to be understood and used with confidence. At the same time, students will gain an understanding of the nature of the organisational frameworks within which they must work, and will appreciate the motives and methods of business organisations. Students will also acquire the basic knowledge which will enable them to co-operate with specialists in such fields as motivational research, market research, educational technology and advertising.

1st Year. *Tutor:* Mr R. E. Bray. *Curriculum:* complementary studies, history of art and design, typographic theory, methods of graphic reproduction, production technology, business organisation and practice, photography, typographic, graphic and three-dimensional design.

Course duration: September to July (35 weeks)

Examinations: internal

2nd Year. *Tutor:* G. F. Hollingworth. *Curriculum:* complementary studies, history of art and design, typographic theory, production technology, statistics, marketing, design, photography.

Course duration: September to July (35 weeks)

Examinations: internal

3rd Year. *Tutors:* I. T. Sharp (Option A), D. M. Glen (Option B), K. D. Hicks (Option C). *Curriculum:* complementary studies, history of art and design, typographic theory, production technology, marketing, professional practice, design, photography.

Course duration: September to March (24 weeks)

Examinations: internal

Careers in Graphic Design

The graphic designer is primarily concerned with the design of such printed items as books, newspapers, magazines, posters, advertising material, packaging and certain kinds of display material, but his work also includes other kinds of visual communication by means of drawn, painted, photographic and three-dimensional images and symbols.

The importance of good graphic design is becoming ever more widely recognised in industry and commerce, not only for advertising purposes but also in publishing, the promotions and training departments of private and nationalised industries, in film and television studios, in government departments and in many other related fields.

Students who have specialised in typographic design and bookwork will normally seek employment with publishing houses, advertising agencies, the promotions departments of manufacturing industries, printing houses, newspapers, and with other companies that require the services of print designers with a bias towards typography and layout. Those who have specialised in general graphic and publicity design or in three-dimensional graphics will find employment with advertising agencies, design consultancies, public service companies, the promotions departments of manufacturing industries, and with television and film companies.

There is a well established need for designers who have a good educational background, and whose training equips them to take charge of the design and production of printed matter from the time when it is first commissioned to its eventual production, often in many thousands of copies. The designer may be required not only to take charge of the visual aspects of the work but also to make a detailed analysis of his client's practical needs, to commission specialists in such fields as illustration and photography, and to control production of the finished product.

Foundation Course in Art and Design (B) (DES3054)

Course Adviser: Mr J. W. Bailey

A one year full-time course provides foundational education in the practice, history and philosophy of art and design for (a) students wishing to proceed to advanced specialist courses in one or other of the various branches of design for industry, or (b) those wishing to pursue courses leading to the Diploma in Art and Design. The course consists of 30 hours per week of study including 5 hours of supervised private study in the studio.

Qualifications for entry: students cannot normally be accepted unless they have at least five G.C.E. 'O' level passes or an equivalent combination of 'O' and 'A' level subjects (three at least of which should be in academic subjects and one of these must give evidence of an ability in English) or any other qualifications deemed to be equivalent. Students must not be less than 17 years of age on the 1st October of the year of entry. Entry to the course is by selection at an interview, when students are required to bring a folio of their own work.

Curriculum: craft projects, history and appreciation of art and design, basic design in two and three dimensions, drawing, print making and short lecture courses on psychology of perception, science of colour and optics, and visual communication.

Course duration: September to July (35 weeks)

Examinations: internal

Department of Business and Administration

Head of Department: B. G. Booth, BA (Econ), MTech, FSS

Principal Lecturers

P. Hewitt, BSc, MTech
A. G. Rooney, BSc (Econ), MPhil
E. Schofield, BA (Com), ACIS

Senior Lecturers

R. J. Hudson, BSc (Econ), AACCA
J. M. Kidd, MA
W. Kitchen, BA(Com)
J. V. Pearson, ARVA, IPFA
F. W. Shakespeare, IPFA. ARVA
T. J. Squires, BCom, MSc
R. S. Still, LI.B
Mrs P. A. Thomas, LI.M
J. R. Topping, BSc(Econ), FRGS, ACIS
M. R. Wilson, MA

Lecturers

R. A. Blackburn, BSc(Econ), ACA
Mrs B. D. Cave, FSCT, FFTCom
D. Clusky, BA, AIB
A. D. Culley, LI.B
M. J. English, FCA
P. J. Gaule, BComm (Dublin)
S. M. Haddock, MA
J. Hampson, BSc (Econ)
S. O. C. Hey, BCom, AMBIM
J. Isherwood, AIB
C. R. Jackson, LI.B
D. Jones, BSc (Econ)
Mrs M. J. Jones, BA
R. J. Kendle, MA (Econ)
K. M. Phillips, BA
E. Rosbottom, MA (Econ)
M. A. Thompson, BSc (Econ), ACMA
H. Warburton, BA, FCA, ATII

The Department of Business and Administration

The Department provides full-time, sandwich, block-release and part-time courses in business education. These courses lead to qualifications in business studies and the professions.

The Department aims to offer students an opportunity for intellectual development by providing an inter-disciplinary approach. Seminars and tutorials form an integral part of the teaching to enable students to initiate and develop their creative thinking. The Department has close links with Industry, Commerce and Public Authorities in Lancashire and Cumbria and other regions.

Higher National Diploma in Business Studies (Sandwich) (A2) (DES1094)

Course Adviser: Mr S. O. C. Hey

A three-year sandwich course which links three periods of full-time study with two periods of practical training within a business or government organisation. The practical training periods are of six months and nine months respectively. The periods of Polytechnic study are of six months each and will include residential periods of special study.

Work-based students will be those already employed or those recruited for secondment to the course. In such cases the employer will provide each period of internal practical training. Polytechnic-based students will be those joining the course on their own initiative straight from school. Help will be given to them in finding suitable practical training, and this may be undertaken with more than one organisation to widen the students' experience.

The award of the Diploma will be based upon (1) success in the examinations in each year in each subject, (2) making not less than 80% of the possible attendances in each year, (3) the submission of a thesis of approximately 5,000 words upon an approved business topic, and (4) the passing of an oral examination on the subject of the thesis. The award of the Diploma carries with it exemption from certain subjects in the examinations of a large number of professional associations in business and the public services.

Qualifications for entry: candidates must (1) be not less than 18 years of age, (2) hold the General Certificate of Education at 'O' level in English and in three other subjects, and (3) hold the General Certificate of Education at 'A' level in at least one subject, *or* hold a good standard Ordinary National Diploma or Certificate in Business Studies.

Curriculum: this has been designed to enable students to select ONE of the following seven group courses of study:

1. *Accounting.* Economics, applied economics, accounting, accounts and finance, general law, mercantile law, business organisation, applied statistics, costing; and one subject from office organisation and data processing I; and two subjects from data processing II, industrial law, company law, human relations.

2. *Company Secretaryship.* Economics, applied economics, accounting, accounts and finance, general law, mercantile law, business organisation, office organisation, secretarial and administrative practice, applied statistics; and one subject from costing I, data processing I; and two subjects from costing II, data processing II, company law, industrial law, human relations.

3. *Public Administration.* Economics, economics of public finance, accounting, general law, administrative law, business organisation, applied statistics, social policies and social needs, government and public administration, introduction to local government administration; and one subject from office organisation, data processing I, human relations; and two subjects from data processing II, human relations, personnel administration, local government law and finance.

4. *Modern Foreign Languages.* Economics, applied economics, accounting, uses of accounts, general law, mercantile law, business organisation, business finance, languages (one or two from French, Spanish, German), applied statistics; and two subjects from human relations, marketing, industrial law, secretarial and administrative practice.

5. *Personnel Management.* Economics, applied economics, accounting, uses of accounts, general law, mercantile law, business organisation, business finance, applied statistics, human relations, personnel administration; and one subject from office organisation, data processing I; and two subjects from data processing II, secretarial and administrative practice, industrial law, psychology.

6. *Marketing.* Economics, applied economics, accounting, uses of accounts, general law, mercantile law, business organisation, business finance, applied statistics, marketing; and one subject from data processing I, office organisation; and two subjects from data processing II, market research, advertising, transport, purchasing, human relations.

7. *Industrial and Commercial Services.* Economics, applied economics, accounting, uses of accounts, general law, mercantile law, business organisation, business finance, applied statistics, production methods; and one subject from data processing I, office organisation, human relations; and two subjects from data processing II, work study, operational research.

The course will consist of lectures, tutorials and seminars. There will be a number of practical exercises and case studies, both simulated and actual.

1st Year.

Course duration: September to April (26 weeks)

Examinations: internal

2nd Year.

Course duration: September to April (26 weeks)

Examinations: internal

3rd Year.

Course duration: January to July (23 weeks)

Examinations: internal, externally assessed

Qualification: Higher National Diploma in Business Studies

Higher National Diploma in Business Studies (Full-time) (A2) (DES 1094)

Course Adviser: Mr A. G. Rooney

A two-year full-time course which must be followed by a 12 month period of appropriate practical training in business before the award of the Diploma.

The award of the Diploma will be based upon (1) success in the examinations in each year in each subject, (2) making not less than 80% of the possible attendances in each year, (3) the submission of a thesis of approximately 5,000 words upon an approved business topic, (4) the passing of an oral examination on the subject of the thesis, and (5) the production of a certificate showing that the candidate has worked in industry or commerce for not less than 12 months in a position for which his diploma course has made him suitable.

The award of the Diploma carries with it exemption from certain subjects in the examinations of a large number of professional associations in business.

The course contains three options, namely: Accountancy and Company Secretaryship, Marketing, and Modern Foreign Languages. The teaching of modern foreign languages will be undertaken by the Department of Language and Social Studies. French, German, and Spanish are offered and students may select one or two of these for study. Applicants must possess a G.C.E. 'A' level certificate in at least one of the chosen languages. Emphasis is placed on obtaining practical skills in language especially applicable to the world of business in relation to the European Common Market.

Qualifications for entry: candidates must (1) be not less than 18 years of age, (2) hold the General Certificate of Education at 'O' level in English and three other subjects, and (3) hold the General Certificate of Education at 'A' level in at least one subject, *or* hold a good standard Ordinary National Diploma or Certificate in Business Studies.

1st Year. *Curriculum:* economics, business law I, business organisation, accounting I or interpretation of accounts, data processing I or marketing I or modern foreign languages, general studies.

Course duration: September to July (35 weeks)

Examinations: internal

2nd Year. *Curriculum:* applied economics, business law II, statistics and/or marketing II and/or sociology of industry and commerce, data processing II, accounting II or modern foreign languages and export distribution and promotion, general studies and a research project.

Course duration: September to July (35 weeks)

Examinations: internal, externally assessed

Qualification: the Higher National Diploma in Business Studies after appropriate business experience.

Careers in Business or Public Administration

Business is concerned with the profitable and efficient combination of men, money, machines and materials, and it covers all manufacturing processes, the buying and selling of goods and services; and the advertising, finance, insurance and transport which are essential to its smooth operation. Public administration is the efficient and effective use of resources in the provision of a wide range of services to the community.

Thus a wide range of career opportunities is available to suitably qualified men and women who develop an interest in organisation, administration and leadership. Careers in business or public administration may be concerned with general administration or the special fields of accountancy, marketing, banking, company secretaryship, personnel management, local government administration and finance and similar interests. Posts range from clerical positions to the highest executive appointments and directorships.

A large number of post-graduate diploma courses are available at universities and polytechnics for those students who wish to continue their education after gaining the Higher National Diploma. Many universities will accept holders of a good Higher National Diploma in Business Studies for entry to their post-graduate degree courses.

ACCOUNTANCY

Institute of Chartered Accountants (Foundation Course) (A2) (DES4292)

Course Adviser: Mr H. Warburton

A one-year full-time course offered by arrangement with the Institute of Chartered Accountants and the North West Society of Chartered Accountants to give prospective chartered accountants a fuller understanding of the principles underlying their profession and its work.

Qualifications for entry: applicants should be not less than 17 years of age on the 1st October of the year of entry, and possess five G.C.E. subjects of which two must be at 'A' level. The subjects must be taken from an approved list. Applicants must also satisfy such prior conditions relating to the admission to the course as are laid down in the Royal Charters and Bye-laws, and by the Council of the Institute. Full details of the requirements for membership of the Institute and admission to foundation courses may be obtained from the Secretary, The Institute of Chartered Accountants in England and Wales, Chartered Accountants' Hall, Moorgate Place, London, EC2R 6EQ.

Curriculum: accounting and auditing, economics, English law, framework of business, statistics and mathematics and contrasting studies.

Course duration: September to July (34 weeks)

Examinations: internal, externally assessed

Qualification: successful candidates are eligible for exemption from the Foundation examination of the Institute of Chartered Accountants in England and Wales.

Chartered Institute of Public Finance and Accountancy (Foundation Course) (A2) (DES4829)

Course Adviser: Mr J. V. Pearson

A one-year full-time course under the Institute's new regulations. The course, which is offered in conjunction with the Institute of Chartered Accountants Foundation Course, is compulsory for all non-graduate entrants into local and public authority finance who register with the Institute after 1st September, 1974.

Qualifications for entry: applicants must possess 5 G.C.E. subjects of which two must be at 'A' level. The subjects must include Mathematics and English.

Full details of the requirements for Membership of the Institute and admission to foundation courses may be obtained from the Secretary, The Chartered Institute of Public Finance and Accountancy, 1 Buckingham Place, London SW1E 6HS.

Curriculum: accounting and auditing, economics, English law, framework of business, statistics and mathematics, and contrasting studies.

Course duration: September to July (34 weeks)

Examinations: internal, externally assessed

Qualification: successful completion of the course enables students to progress to the professional examination of the Institute.

Association of Certified Accountants (Foundation Course) (A2) (DES4830)

Course Adviser: Mr R. J. Hudson

A one-year full-time foundation course for non-graduate students wishing to become members of the Association. The course is offered in conjunction with the Institute of Chartered Accountants Foundation Course.

Qualifications for entry: applicants must possess 5 G.C.E. subjects of which two must be at 'A' level or O.N.D./O.N.C. with two credit passes. In all cases the passes must include English Language and Mathematics, or other approved numerate subjects e.g. statistics, accounting, commercial mathematics.

Full details of membership requirements and examination structure may be obtained from the Secretary of the Association of Certified Accountants, 22 Bedford Square, London WC1B 3HS.

Curriculum: accounting and auditing, economics, English law, framework of business, statistics and mathematics, and contrasting studies.

Course duration: September to July (34 weeks)

Examinations: internal, externally assessed

Qualification: successful completion of the course provides exemption from the Foundation examination of the Association, and enables students to progress directly to the professional examinations of the Association.

Institute of Cost and Management Accountants (Foundation Course) (A2) (DES4831)

Course Adviser: Mr M. A. Thompson

A one-year full-time course associated with the Institute of Chartered Accountants Foundation Course and taking the same curriculum and examinations.

Qualifications for entry: applicants must possess 5 G.C.E. passes including at least two at Advanced level. Passes must be obtained in English language and mathematics. Full details of membership requirements may be obtained from the Secretary, The Institute of Cost and Management Accountants, 63 Portland Place, London, W1N 4AB.

Curriculum: accounting and auditing, economics, English law, framework of business, statistics and mathematics, and contrasting studies.

Course duration: September to July (34 weeks)

Examinations: internal, externally assessed

Qualification: successful completion of the course makes students eligible for exemption from Part I of the Institute of Cost and Management Accountants examinations.

Careers in Accountancy

Members of the accountancy profession in the United Kingdom are engaged in various forms of activities in public practice, industry, commerce and the public services. The method of training differs between branches of the profession, depending mainly upon the type of employment which a trainee accountant wishes to enter.

Public Practice. Amongst the services rendered by the public practitioner are: independent auditing; preparation of financial accounts and statements; provision

of taxation service; general and financial advice; financial and other investigations; executorship and trusteeship; liquidations, receiverships and insolvencies; share and business valuations; management consultancy. In addition to the more routine procedures, the work of the practising accountant provides many opportunities for the application of imaginative and original thinking in helping to promote business efficiency at all levels, ranging from the small businessman to international organisations.

Industry and Commerce. The demands by industry and commerce for qualified accountants is ever increasing with the realisation of the essential part which sound accountancy plays in the success of any company. The accountant is particularly concerned with the most efficient use of resources. The work of the management accountant can be varied and particularly interesting, with great scope for the application of imagination and creative thinking. The basic discipline of accountancy, together with the wide experience which can be obtained through its application, provides a particularly favourable entry into general management, as can be evidenced by the number of accountants who are chief executive officers or directors of major United Kingdom and international organisations.

Public Services. Local government, central government, hospitals, public corporations and all public services require qualified accountants to undertake interesting and varied work in the associated fields of financial and management accountancy. The accountant in the public services plays an important role in the formulation and execution of policy in non-profit making organisations where the control of financial and other resources is of great importance.

The career of the professionally qualified accountant may take him through many branches of the work of the profession. Most large firms in public practice have branches or associated firms abroad and opportunities are also available to accountants in industry and the public services to work abroad.

Department of Chemistry and Biology

Head of Department: J. J. Betts, BSc, PhD(Cantab), PhD(Birm), FRIC

Principal Lecturers

D. Brattan, BSc, PhD, ARIC
J. Donnelly, BSc
Miss M. Hodkinson, BSc, PhD, MIBiol

Senior Lecturers

J. F. Brown, BSc, PhD
J. W. Dodd, BSc, PhD, ARIC
G. Dyer, MA, DPhil
M. Edmunds, BA, DPhil
J. D. Hepworth, BSc, PhD, ARIC
A. D. Jones, BTech, ARIC, PhD
F. Ramsden, FIMLT, FRSH

Lecturers

R. Cotton, BSc, PhD
K. Edgar, MSc, PhD, ARIC
D. Mason, BSc, PhD, ARIC
L. H. G. Morton, MSc, LIBiol
G. Newton, BSc, PhD
Mrs C. A. H. Pullin BSc, PhD
B. M. Smallwood, MA, PhD, ARIC
C. Sutherland, BSc, PhD
J. J. Waring, BSc, PhD, ARIC

Research Assistants

A. C. Hall, GradRIC
P. Jones, GradRIC
P. R. Wearden, GradRIC

The Department of Chemistry and Biology

It is the policy of the Department that the courses it offers should enable any student, no matter what his or her initial qualifications might be, to achieve the maximum development of his or her potential ability. Staff of the Department are committed to this principle and every effort is made through tutorial work and personal guidance to encourage the student to achieve this end. With this in mind the courses offered will enable:

(a) the full-time student with two G.C.E. 'A' level passes or a good O.N.C. in Sciences to proceed to a degree (B.Sc. Sciences) and subsequently to a higher degree (M.Sc. or Ph.D.).

(b) the full-time student with one G.C.E. 'A' level pass or an O.N.C. or O.N.D. in Sciences to proceed to a Higher National Diploma in Chemistry or Applied

Biology, then to Graduateship of the Royal Institute of Chemistry or Membership of the Institute of Biology respectively (honours degree equivalents), and finally to a higher degree (M.Sc. or Ph.D.).

(c) the part-time student with an O.N.C. in Sciences to proceed to a Higher National Certificate in Chemistry or Medical Laboratory subjects. Those with H.N.C. Chemistry may then proceed to a B.Sc. or B.Sc. Honours in Chemistry, and finally to a higher degree (M.A., M.Sc. or Ph.D.).

The scheme of courses allows students to transfer from part-time to full-time courses and vice versa.

The Departmental laboratories are equipped with a wide range of modern and sophisticated instruments, and lecture theatres incorporate audio-visual systems. Staff of the Department are also convinced of the importance of collaboration with industry. The subject matter of most courses offered has an industrial bias, and sandwich schemes enable students to become aware of the ways in which principles are applied in an industrial situation. The Department is participating in a number of joint projects with industry and would welcome an extension of this area of activity.

Research

The Governors of the Polytechnic offer a number of Research Assistantships and these may be supplemented by Science Research Council Scholarships.

There are eight research laboratories in the Department and equipment includes instruments for infrared, ultraviolet, visible, nuclear magnetic resonance, and atomic absorption spectroscopy, gas chromatography, a variety of radiochemical and electrochemical equipment, a refrigerated high speed centrifuge, direct reading Warburg apparatus, an amino-acid autoanalyser, electro-physiology recording assemblies, sterilisation and incubation facilities, a fluorescence microscope equipped for photomicrography, an ultramicrotome, and an animal house.

Areas of research activity at present include (1) Chemistry: coordination chemistry, synthetic, aromatic and heterocyclic chemistry, sterically hindered basic dyes, reaction kinetics; (2) Biology: biophysical properties of blood cells and nerve cells, carbohydrate metabolism, serotaxonomy of fungi; (3) Environmental Science: solvent extraction and adsorptive bubble separation methods, distribution and removal of contaminants in water, microbial ecology of aquatic environments, microbial biodeterioration of timber.

SCIENCES

B.Sc. (Sciences) of the University of London (A1) (DES2149)

Course Adviser: Dr J. F. Brown

A three-year full-time course for science qualified students leading to a two-subject degree from the following offered in this Polytechnic: Biology, Biochemistry, Physiology, Chemistry, Physics, Astronomy and Mathematical Methods.

To qualify for the degree, a candidate should have completed satisfactory courses and have reached acceptable standards in the examinations set by the University of London in *three* subjects at Standard I and *two* main subjects at Standard II. Standard I subjects require the equivalent of 1/3rd year of full-time study and Standard II subjects require one year of full-time study beyond Standard I.

Qualifications for entry: applicants must meet the general entrance requirements of the University of London which are broadly as follows: (a) five G.C.E. subjects including two at 'A' level, or (b) four G.C.E. subjects including three at 'A' level. All candidates should have passed in mathematics at the Ordinary or Advanced level. Alternative qualifications are acceptable, e.g. a good Ordinary National Certificate or Ordinary National Diploma in Sciences.

An applicant who feels that he can meet these requirements must obtain a Statement of Eligibility from the University obtainable from: Secretary to the University Entrance Requirements Department, University of London, Senate House, London WC1E 7HU.

1st Year. *Tutor:* Dr A. R. Curtis. *Curriculum:* students will select three subjects for study from the following: Chemistry I, Physiology I, Biology I, Physics I, Mathematical Methods I.

Course duration: September to July (35 weeks)

Examinations: University of London

2nd and 3rd Years. *Tutor:* Dr A. D. Jones

Students will select one of the following subjects for study in the second year and a further subject for study in the third year:

Biochemistry II

Physical and chemical properties of carbohydrates, proteins, fats, purines and associated compounds, properties of heterogeneous systems, separation procedures, spectrophotometry and electron microscopy; thermodynamics of biochemical equilibria; digestion and absorption, main pathways of degradation and biosynthesis, organisation and control of biochemical processes, biochemical genetics.

Physiology II

Biophysical chemistry; blood, muscle, nerve; biological chemistry; biochemistry, cardiovascular system; respiration, digestion and absorption, metabolism, water balance; anatomy and functions of the central nervous system, the autonomic nervous system; endocrine organs; reproduction; intermediary metabolism; genetics, nucleic acids.

Chemistry II

Inorganic and theoretical chemistry; nonaqueous solvents; radioactivity, extraction of elements from their ores; thermodynamics and electrochemistry, molecular structure, kinetics, surface chemistry, stereochemistry, mechanisms, spectroscopy, aromatic and aliphatic chemistry, heteroaromatic and alicyclic compounds, natural products.

Physics II

General properties of matter; atomic, electron and nuclear physics; heat and thermodynamics; acoustics; optics; electricity, magnetism and electronics, mathematics and computing.

Astronomy II

Descriptive astronomy, spherical astronomy, planetary motions, astrophysics, radiation laws, spectroscopy, atomic excitation, stellar evolution, solar terrestrial relations, radio astronomy; use of equatorial telescope and transit instrument, planetary and solar observations, double stars, celestial photography, use of astrograph and spectrograph, photoelectric photometry.

Course duration: September to July (35 weeks)

Examinations: University of London

Qualification: Bachelor of Science of the University of London. Successful candidates will be awarded a First or Second or Third Class Honours or a Pass Degree. Second Class Honours will be divided into an Upper and Lower Division.

Careers in Life Sciences

The biological chemical industry is expanding continuously as the demand for newer drugs and other biologically active materials rises. Biological scientists are needed for these industries both in research and development and in production departments. There is an increasing use of medical biologists in the hospital service, a trend which has accelerated since the report of the Zuckerman Committee on the advantages of a Scientific Officer class for the hospital service. Biological scientists are also required by Medical Research Council Units and other Government sponsored research institutions. There is always a demand for biological science qualified graduates in teaching; newer teaching methods and curricula give promise of interesting and exciting careers in this field.

Careers in Physical Sciences

A wide range of opportunities are available in the science based and engineering based industries. In the chemical industry, the increasing use of instrumentation and automation in both production and research work has generated a need for a graduate qualified in both chemistry and physics. In many of the engineering industries, the exploitation of new materials has resulted in the need for physico-chemical monitoring procedures which require personnel qualified in the physical sciences.

CHEMISTRY

Graduate Membership of the Royal Institute of Chemistry: four-year course

Course Adviser: Dr J. W. Dodd

A Polytechnic-based sandwich course, in which the Higher National Diploma in Chemistry is taken at the end of the third year; good marks in this examination will give exemption from Part I of the Institute's Graduate Membership examinations, though students may take Part I in addition to the Higher National Diploma. The endorsement subject, advanced analytical chemistry, is studied concurrently with the H.N.D. subjects throughout the second and third years. Success in the H.N.D. and endorsement examinations or success in the Part I examination qualifies a student for admission to the Licentiateship of the Royal Institute of Chemistry. Part II of these examinations, success in which gives the academic qualification for admission to Associateship, is taken at the end of the fourth year.

Qualifications for entry: G.C.E. 'O' level passes in English language, mathematics and *either* two science subjects and one arts subject *or* two arts subjects and one science subject, together with *either* a G.C.E. 'A' level pass in chemistry with evidence that mathematics and physics have been studied to a standard one year beyond the 'O' level syllabus; *or* an Ordinary National Certificate in Science with a pass in elective Chemistry. Other combinations of entry qualifications may be acceptable; the Course Adviser should be consulted. Success in departmental examinations taken during the course provide the additional qualifications for entry to Part I and Part II of the Graduate Membership examinations.

1st Year (A2) (DES1082) *Tutor:* Dr K. Edgar. *Curriculum:* inorganic chemistry, chemical bonding, atomic structure, valency, typical elements, radiochemistry: organic chemistry; electronic theory of organic chemistry and its applications to functional group chemistry, stereo-chemistry I: physical chemistry; first law of thermodynamics, chemical kinetics, kinetic molecular theory of gases, electrochemistry: general physics: mathematics: general studies.

Course duration: September to March (24 weeks)

Examinations: internal: general physics and mathematics externally assessed if not in possession of G.C.E. at 'A' level or equivalent.

2nd Year (A2) (DES1082) *Tutor:* Dr D. Mason. *Curriculum:* inorganic chemistry; transition elements, co-ordination compounds, carbonyls, nitrosyls: organic chemistry; further reaction mechanisms, aromatic chemistry, stereo-chemistry II; physical chemistry; second and third laws of thermodynamics, electrochemistry (galvanic cells), phase equilibria, colloid and surface chemistry: environmental studies: advanced analytical chemistry: general and related studies.

Couse duration: September to March (24 weeks)

Examinations: internal

3rd Year (A2) (DES1082) *Tutor:* Dr G. Dyer. *Curriculum:* inorganic chemistry; comparative chemistry of the groups, review and extension of theoretical chemistry, solution chemistry: organic chemistry; alicyclic and heterocyclic chemistry, stereo-chemistry III: physical chemistry: review and extension of thermodynamics, thermodynamics of solutions, structural chemistry, chemical kinetics: environmental studies: advanced analytical chemistry: related studies.

Course duration: September to July (35 weeks)

Examinations: Grad.R.I.C. Part I, H.N.D. in Chemistry, endorsement in advanced analytical chemistry.

4th Year (A1) (DES2104) *Tutor:* Dr J. W. Dodd. *Curriculum:* review and extension of chemical subjects studied: recent advances in inorganic, organic and physical chemistry.

Course duration: September to July (35 weeks)

Examinations: Grad.R.I.C. Part II

Qualification: Graduate Membership of the Royal Institute of Chemistry

Graduate Membership of the Royal Institute of Chemistry: two-year course (A2 and A1) (DES2104)

Course Adviser: Dr J. W. Dodd

A full-time course leading to the Graduate Membership examinations of the Royal Institute of Chemistry.

The chemical subject matter of the course is identical with that of the third and fourth years of the four-year course, but timetabling will allow ancillary subjects to be studied during both years of this course. The third ancillary subject is not required for entry to the Grad.R.I.C. Part I examination but must be passed before entry to the Grad.R.I.C. Part II examination will be accepted.

Success in the Grad.R.I.C. Part I examination, which is taken at the end of the first year, qualifies a student for admission to the Licentiateship. The GradR.I.C. Part II examination is taken at the end of the final year.

Qualification for entry: G.C.E. 'O' level passes in mathematics, English language, one science subject and two arts subjects, *or* two science subjects and one arts subject; and a Higher National Certificate in Chemistry. The additional requirements for admission to both parts of the Institute's examinations will be met by students who are successful in departmental examinations taken during the third year of the course. Candidates for admission to the final year of the course should consult the Head of Department after assuring themselves that they have the appropriate qualifications. The course duration, examinations and qualifications are the same as those described in the 3rd and 4th years of the four-year course.

Corporate Membership of the Royal Institute of Chemistry

The Royal Institute of Chemistry is the acknowledged professional organisation for chemists, its members being engaged in the advancement, teaching and practice of chemistry and its application in industry and the public service. The standard required of applicants for associateship is not less than that required for a good honours degree of a British university, and success in Part II of the Institute's Graduate Membership examination is recognised by most universities as a qualification for entry to their research schools and the subsequent award of a higher degree. There are three grades of corporate membership: Licentiateship (L.R.I.C.), Associateship (A.R.I.C.), Fellowship (F.R.I.C.). Candidates for either of the first two grades must have (a) an acceptable level of general education, (b) suitable academic qualifications in chemistry, and (c) one or two years' experience in the practice of chemistry.

Students taking Grad.R.I.C. courses are advised to register as Student Members of the Institute and should write for details to: The Registrar, The Royal Institute of Chemistry, 30 Russell Square, London, W.C.1. Students receive literature from the Institute and may attend meetings of its members.

Careers in Chemistry

The work of a chemist may involve teaching, research, development, production and control.

There is a national shortage of graduate chemistry teachers, particularly those with some industrial experience. Both the Grad.R.I.C. and the H.N.D. are recognised by the Department of Education and Science as academic teaching qualifications for science teachers.

Pure or fundamental research is work on projects which may not have any immediate applications but will add to the store of existing knowledge and have a long term influence upon new products and production methods. Applied research makes use of present knowledge and builds upon it with some immediate end in view, e.g. to produce a new synthetic fibre or a new drug.

Development is a branch of applied research and is concerned with the conversion of a laboratory scale process to a chemical plant process.

Chemists on the production side of industry are often supervising chemical plant processes and carry responsibility for maintenance of the output and the quality of the product. They must possess technical ability and supervisory skills and must be willing to take decisions. In quality control laboratories raw materials and manufactured products are tested during all stages of production. The qualified chemist has to be constantly aware of new developments in analytical methods and of new instruments available commercially.

In the chemical industry a large proportion of the managers are chemically qualified. The rapid adaptation to accommodate new products and the commercial exploitation of research findings requires such a management policy. For the able and industrious, the highest executive appointments and directorships may be obtained.

The chemical industry has undergone a consistent expansion and reliable forecasts show that because of the introduction of new products the expansion will continue. The success of the industry is the result of the continued efforts of scientists both in research and development and in the rapid application of new knowledge to production methods. The industry requires a regular recruitment of qualified staff into responsible posts and the biggest demand is for qualified chemists (B.Sc., A.R.I.C. and L.R.I.C.). Chemists are also required by universities, colleges of technology, schools, hospitals, government sponsored research institutions and independent research organisations.

Department of Construction and Urban Studies

Head of Department: T. M. Ryan, BSc (EstMan), FRICS, FIQS

Principal Lecturer

W. H. Roberts, MIOB, ACSI

Senior Lecturers

B. Carter, BScTech, CEng, MICE
C. Emmott, BSc, FRICS, FRGS
G. S. Holden, CEng, FIMunE
D. M. Horsley, ARICS, AIQS

Lecturers

S. R. Cardwell, AIAS, MIOB
K. E. Davis, ARICS, AIQS, AMCT
W. H. Davies, MIOB
T. Hargreaves, DipArch, ARIBA, FRSA
P. Mangat, BSc, PhD
J. M. Patchett, MIOB, Cert Ed
J. A. Tinker, BSc
D. A. Wilde, ARICS, AIQS

The Department of Construction and Urban Studies

The Department specialises in courses leading to professional qualifications in Construction Technology and Management and in the various branches of Surveying.

Courses are organised on a full-time, sandwich or day-release basis and enable students to progress towards a variety of qualifications at Professional and Higher Technician level in the construction industry and its associated professions.

A major feature of the Department is the sandwich course at Higher National Diploma level, enabling students to spend several months working in industry as part of their course. The Department makes every effort to place students in posts where their interests and aptitudes may be fully realised. Development is proceeding on a wide front and a range of optional subjects is being progressively introduced. The intention is to offer students a sound technical education in fundamental subjects and enable a choice to be made in whichever specialist field the student is interested. A typical range of specialist fields is: Site and Office Management, Quantity Surveying, Local Authority Building Inspection, Property Management, Architecture, Construction Planning, Building Economics, Town Planning, Estate Agency and Valuation, and Civil Engineering.

Further developments will include degree courses in Urban Studies and related subjects. The Department has a wide range of contacts in the industry and the professions, and on successful completion of a course students from the Department have experienced no difficulty in obtaining satisfactory and rewarding employment.

Corporate Membership of the Institute of Building, Final Examinations Part II (A1) (DES1642)

Course Adviser: Mr W. H. Roberts

A one-year full-time course for those who wish to qualify for corporate membership of the Institute of Building. Subjects will also be studied which will be relevant to the final examinations of the Royal Institution of Chartered Surveyors, the Institute of Quantity Surveyors, and the Construction Surveyors' Institute. Membership of an appropriate professional body of high standing is an essential requirement for persons who are seeking senior posts in the industry and professions.

Qualifications for entry: holders of any of the following qualifications will be admitted to the course:

(a) Higher National Diploma in Building or Construction (Building, Quantity Surveying or Structures),

(b) Institute of Building Associate A1 Examinations,

(c) Institute of Building, Final Examinations Part 1,

(d) Institute of Building Licentiate Diploma under old regulations, or

(e) A first degree of a British University or C.N.A.A. in Architecture, Estate Management, Civil, Electrical, Mechanical, or Environmental Engineering.

Students who have passed the Institute of Building Final Examinations Part 11 may apply to the Institute of Quantity Surveyors for complete exemption from all but the Final Examination.

Tutor: Mr W. H. Roberts. *Curriculum:* principles of management, building production and project management, structural theory and design, environmental and services engineering, economic and quantitative analysis, management practice, building law and contracts, estimating and analysis of prices, quantities (civil engineering and building), building economics and cost planning, professional practice and reports, variation accounts and interim valuations.

Course duration: September to June (33 weeks)

Examinations: Institute of Building (external)

Qualification: Corporate Membership of the Institute of Building

Higher National Diploma in Building (A2) (DES1084)

Course Adviser: Mr J. M. Patchett

A three-year sandwich course which provides education and training for careers with professional status in Quantity Surveying, Building Management, and Estimating. An industrial training period of 35 weeks (including the Summer vacation) is provided between the first and second years of the course in order to provide practical experience of site and/or office work. The third year will consist entirely of full-time study at the Polytechnic. Holders of the Diploma are eligible for membership of the Society of Surveying Technicians and may apply for exemption from part of the examinations of the following professional bodies: Institute of Quantity Surveyors, Institute of Building, and Construction Surveyor's Institute.

As an integral part of the course second-year students will attend a five-day residential course in land surveying. The fee of approximately £15.00 must be paid by the student. Students in receipt of Local Authority grants will in most cases be reimbursed part of the cost by their supporting authorities.

Qualifications for entry:

(a) The General Certificate of Education (or its equivalent) in four subjects, one of which must be at 'A' level. The subjects must include mathematics, an appropriate science and a subject requiring a facility in written English, or

(b) an Ordinary National Diploma in Building, or

(c) an Ordinary National Certificate in Building or Construction (current scheme), or

(d) a Full Technological Certificate in Building Crafts and a pass in the Pre-Higher National Certificate Bridging Course.

1st Year. *Tutor:* Mr J. A. Tinker. *Curriculum:* selected subjects, dependent upon entry qualifications, taken from building technology, environmental studies, theory of structures, mathematics and statistics, surveying, accounting and general studies.

Course duration: September to April (26 weeks)

Examinations: internal

2nd Year. *Tutor:* Dr P. S. Mangat. *Curriculum:* selected subjects taken from building technology, measurement and economics of construction work, environmental studies, land surveying, administration, economics, law and general studies.

Course duration: January to July (23 weeks)

Examinations: internal

3rd Year. *Tutor:* Mr J. M. Patchett. *Curriculum:* building technology, measurement and economics of construction work, environment studies, management and general studies.

Course duration: September to June (34 weeks)

Examinations: internal, externally assessed

Qualification: Higher National Diploma in Building

Careers in Construction

The industry, which is one of the largest in the country, continually requires young men of character and determination who are willing to accept responsibility and to train for technical and executive positions.

There are many and varied occupations followed by members of the construction team and demand exists for project managers, quantity surveyors, estimators, planners, site engineers and within administrative areas.

Construction work is interesting, always rewarding and varied to a greater degree than found in other technical industries.

There are ample opportunities for young men and women possessing the right qualities and ability to reach executive positions.

There is a wide range of construction work—industrial and commercial, ecclesiastical and civic, residential, industrialised and prefabricated buildings, maintenance and restoration work. Within the industry there are many sizes of firms each specialising in one or more of the areas listed above.

Department of Electrical and Electronic Engineering

Head of Department: A. Palmer, BScTech, CEng, MIEE

Principal Lecturers

R. O. Hall, BScTech, CEng, MIEE
M. F. McKenna, BSc, PhD, CEng, MIEE

Senior Lecturers

R. N. Abbott, BSc, CEng, MIEE
J. A. Askew, MSc, CEng, MIEE
A. Leadbetter, BSc
P. M. McEwan, MSc, MIEE
J. K. Moss, BSc, CEng, MIEE
R. J. Simpson, MSc, PhD, CEng, MIEE, MInstMC
N. T. Slater, BSc, CEng, MIEE
T. Wilson, BSc, CEng, MIERE

Lecturers

D. Baxter, TEng(CEI), AIERE, AMInstE
T. H. Cowperthwaite
H. Duckworth, CEng, MIEE
J. D. Heys, BSc
T. G. Izatt, MA, CEng, MIEE
W. S. Kirkpatrick, CEng, MIEE
H. S. Senior, BSc
G. Stevenson, BTech
T. J. Terrell, MSc, PhD, CEng, MIEE
W. M. Walmsley, MSc

Research Assistant

Vacancy

The Department of Electrical and Electronic Engineering

This Department provides graduate and professional courses in electrical and/or electronic engineering. Tutorial, laboratory and project work are integral parts of all courses. The Department has separate well-equipped laboratories for experimentation in instrumentation and measurements, electronics and communications, electrical machines and power, control, computers and high voltage. Equipment available includes a PDP8/E control computer, an E.A.L. 380 analogue computer, time and frequency domain analysis equipment and 500 k.v. high voltage test equipment.

A number of advanced courses are offered which lead to professional or technician qualifications in electrical and electronic engineering. During the period whilst the W. R. Tuson College of Further Education is being built the Department, in conjunction with the Department of Mechanical and Production Engineering, will accommodate some of the courses which provide entry to engineering degree and diploma courses. Within the range of diploma and degree courses, facilities exist for transfer of students where the regulations of appropriate examining bodies permit.

Academic work is enhanced by the close relationship of the Department with industry. A substantial amount of consultative, development and testing work is carried out on its behalf.

Research within the Department is encouraged, and several members of the academic staff along with research students are actively engaged in both theoretical and practical projects. At the present time research is being carried out in the areas of analogue and digital technology and in control systems.

ELECTRICAL AND ELECTRONIC ENGINEERING

B.Sc. in Electrical and Electronic Engineering of the Council for National Academic Awards (A1) (DES1385)

Course Adviser: Dr R. J. Simpson

A four-year 'thick sandwich' course leading to the award of the Degree of Bachelor of Science in Electrical and Electronic Engineering. The third year of the course will be spent in Industry. During the 1975/76 session the first and second years of the course will be in operation but details of the final year academic studies are included for information.

Qualifications for entry: normally students must hold either: (a) a General Certificate of Education with passes in five subjects, of which two must be at Advanced level. The subjects must include mathematics, physics and preferably English language. The Advanced level subjects must normally be mathematics (pure, or pure and applied) and either physics or engineering science; or (b) a General Certificate of Education with passes in four subjects, of which three must be at Advanced level. The subjects passed must include mathematics, physics and preferably English language. The three Advanced level subjects must normally be mathematics (pure or pure and applied) and either physics or engineering science; or (c) an Ordinary National Diploma in Engineering or Technology (Engineering) or an Ordinary National Certificate in Engineering with passes of sufficient merit in at least three appropriate subjects, one of which must be mathematics; or (d) in exceptional cases, qualifications equivalent to the above may be accepted, at the discretion of the Director.

1st Year (A1) (DES1385). This is shared by students pursuing the B.Sc. course in Mechanical Engineering so the choice of discipline may be deferred until after the first year examinations. It also has the advantage of alerting the student to the essential unity of engineering as a discipline. *Curriculum:* mathematics and computer studies, electrical science, mechanical science, physical science, logic and electronics, related studies, data acquisition and processing and an appropriate general study which can be conversational French or German.

Course duration: September to July (35 weeks)

Examinations: internal

2nd Year (A1) (DES 1385). *Curriculum:* mathematics, related studies, instrumentation and control, physics, electrical energy conversion, electromagnetism and circuit theory, electronics and an appropriate general study which can be conversational French or German.

Course duration: September to June (34 weeks)

Examinations: internal

3rd Year. Industrial experience.

4th Year (A1) (DES1385). *Curriculum:* industrial systems, mathematics, analogue and digital systems, electromagnetism and circuit theory, control engineering, power systems or communication engineering, together with a project.

Course duration: September to June (34 weeks)

Examinations: internal, externally assessed

Qualification: successful completion of the course results in the award of the degree of Bachelor of Science in Electrical and Electronic Engineering.

Associate Membership of the Institution of Electrical Engineers, Graduate Membership of the Institution of Electronic and Radio Engineers

Course Adviser: Mr R. O. Hall

A four-year sandwich course for students wishing to satisfy the academic requirements for election as an Associate Member of the Institution of Electrical Engineers and/or Graduate Member of the Institution of Electronic and Radio Engineers. Successful completion of the first three years of the course leads to the award of a Higher National Diploma in Electrical and Electronic Engineering, giving exemption from the Council of Engineering Institutions' Part I Examinations. The final year of the course leads to the Council of Engineering Institutions' Part 2 Examinations, and Associate Membership of the professional electrical and electronic engineering institutions.

Students selected for the course may be in employment and receive support from their industrial concern, or alternatively some students may wish to pursue the course independently. The latter students may be direct from school or may already have obtained some industrial experience. These two groups are referred to respectively as Industry-based or Polytechnic-based students. In each of the first two years of the course students will normally spend alternate six monthly periods in full-time study at the Polytechnic and in industry. The final two years will be spent in full-time study at the Polytechnic. The industrial training periods for these latter students are, wherever possible, arranged by the Polytechnic.

Qualifications for entry to the first year of the course: an Ordinary National Diploma in Technology (Engineering), an Ordinary National Certificate or Diploma in Engineering, *or* completion of the Advanced level courses for the General Certificate of Education in mathematics and physics or engineering science with a pass in at least one of these subjects, together with a pass in each of three additional subjects at Ordinary level, *or* any equivalent qualification.

1st Year (A2) (DES1096) *Tutors:* Mr R. N. Abbott and Mr T. G. Izatt. *Curriculum:* mathematics and computing, electric circuits and electronics, electric fields and electromechanics, engineering science, mechanical engineering science, technical communication, workshop and laboratory techniques, general studies.

Course duration: September to April (26 weeks)

Examinations: internal

2nd Year (A2) (DES1096) *Tutors:* Mr H. S. Senior and Mr G. Stevenson. *Curriculum:* mathematics, electric circuits, fields and measurements, electronic engineering, electrical power engineering, physics, general studies.

Course duration: September to April (26 weeks)

Examinations: internal

3rd Year (A2) (DES1096) *Tutors:* Mr A. Leadbetter and Dr T. J. Terrell. *Curriculum:* mathematics, circuits, fields and measurements, electronics, electrical power, electrical machines, control and computation, telecommunications, electrical materials, management studies.

Course duration: September to April (26 weeks)

Examinations: internal, externally assessed

Qualification: Higher National Diploma in Electrical and Electronic Engineering

4th Year (A1) (DES3708) *Tutors:* Mr J. A. Askew and Mr R. O. Hall. *Curriculum:* advanced studies in the fields of electronics, electromagnetic fields and networks, communication engineering, computer engineering, electrical power engineering, electrical machines, mathematics, management studies.

Course duration: April to July (10 weeks) and September to May (40 weeks approximately)

Examinations: C.E.I. Part 2

Qualification: Associate Membership of the Institution of Electrical Engineers, and/or Graduate Membership of the Institution of Electronic and Radio Engineers.

Council of Engineering Institutions Part 2 Examinations (A1) (DES3708)

Course Adviser: Mr J. A. Askew

The Institution of Electrical Engineers and the Institution of Electronic and Radio Engineers are the professional organisations for electrical and electronic engineers. These form part of the Council of Engineering Institutions (C.E.I.). The I.E.E. and the I.E.R.E. both require graduate level academic qualifications for entry to corporate membership, and these are provided by the C.E.I. Part 2 Examinations. The title of Chartered Engineer (C.Eng.) and corporate membership is conferred after a period of suitable industrial experience.

Qualifications for entry: a Higher National Diploma, or a good Higher National Certificate with three endorsement subjects, or any equivalent qualification.

Curriculum: subjects selected from electrical energy, electrical power engineering, electromagnetic fields and networks, communication engineering, electronic engineering, computer engineering, systems and control engineering, mathematics, management studies.

Course duration: April to July (10 weeks) and September to May (40 weeks approximately). Suitable external candidates will be considered for admission in either April or September.

Examinations: C.E.I. Part 2

Qualification: Associate Membership of the Institution of Electrical Engineers, or Graduate Membership of the Institution of Electronic and Radio Engineers.

Corporate Membership of the Professional Institutions

The Council of Engineering Institutions representing fifteen Institutions, including the Institution of Electrical Engineers and the Institution of Electronic and Radio Engineers, was established in 1966 and holds the sole authority to confer the title 'Chartered Engineer' on members of the profession.

In order to attain the status 'Chartered Engineer' it is necessary for the candidate to either pass or obtain exemption from the Parts 1 and 2 Examinations set by the Council. A Higher National Diploma in Electrical and Electronic Engineering gives exemption from Part 1, whilst a Degree in Electrical and Electronic Engineering gives exemption from Parts 1 and 2. A candidate is then qualified for consideration as an Associate Member of the Institution of Electrical Engineers and/or a Graduate Member of the Institution of Electronic and Radio Engineers. If this is followed by a period of approved experience in the field of electrical or electronic engineering, a candidate is entitled to apply for admission to Corporate Membership and also gain the status 'Chartered Engineer' (C.Eng.).

The standard of the final part 2 examination of the Council of Engineering Institutions is equivalent to that of a first degree in electrical engineering. It is recognised by many universities as a suitable qualification for entry to a higher degree course.

Careers in Electrical and Electronic Engineering

Electrical engineering is concerned with harnessing the physical properties of electricity and the creation, in practical terms, of that which is scientifically possible and socially necessary for the increased wellbeing of mankind.

A professional electrical or electronic engineer employs a scientific approach to the solution of engineering problems. Usually a number of technically feasible solutions are discernable, and the final choice requires the engineer's skill and judgment, based on experience combined with a knowledge of economics, design and material properties.

The electrical and electronic engineering industry encompasses modern developments in computers, communications and automation. It provides a fascinating and worthwhile career for those who have the aptitude for designing, making, testing or research. Electrical and electronic equipment is in general use throughout all manufacturing, process and service industries and men and women with the necessary qualifications and training will have opportunities for employment in these user organisations not directly involved in the manufacture of electrical equipment.

A young engineer, having either obtained a degree in Electrical and Electronic Engineering or successfully completed the C.E.I. Part 2 Examinations, will normally gain experience in industry with a view to achieving corporate membership of one of the professional institutions and Chartered Engineer status. The way is then open to positions in management for those combining their engineering ability with business acumen.

ENGINEERING

Ordinary National Diploma in Technology (Engineering)

Course Adviser: Mr R. Duddle

The Engineering Departments of the Polytechnic have previously provided this course which is now operated by the W. R. Tuson College and it is listed here for information.

Department of Language, Humanities and Special Education

Head of Department: H. E. Probyn, BA

Senior Lecturers

A. D. Feachnie, Dip Ed, DipESN
A. Hardman, DipEd, DipESN
D. Hargreaves, BA
E. Newell, Dip Journalism
R. Pope, BA
D. Swift, BA

Lecturers

S. J. C. Brown, BA
Mrs B. D. Cave, FSCT, FFTCom
Miss L. Donaghie, BA
Mrs M. J. Finch, Cert Teachers of the Deaf, Dip Audiology
Mrs D. M. Gibson
W. J. N Hackl, FIL
Mrs A. M. Hallam, BA
R. H. Hodson, STAC, FIAL
R. G. Hornby, Dip Teachers of ENS, DipEd
J. Hudson
T. K. Jenkinson, MA(Cantab), MA(Essex)
A. C. Roylance
A. Weymouth, BA
Mrs J. Wragg, Dip Teachers of ESN

The Department of Language, Humanities and Special Education

The Department of Language, Humanities and Special Education currently offers a four-year full-time course leading to the Teacher's Certificate of the University of Lancaster, and to the Degree of Bachelor of Education, with special emphasis on the teaching of the severely subnormal child, and incorporating full qualified teacher status for all branches of education. In Languages, the Department offers a wide range of courses for full-time students on Diploma courses, and on a part-time basis with special relevance to the needs of teachers and of industry. Professional courses are offered in Journalism, and secretarial and language skills are developed together in courses for personal assistants and bi-lingual secretaries. A large-scale modular degree course in Humanities is in planning, and if approved will be offered in 1975.

JOURNALISM

Certificate of the National Council for the Training of Journalists: full-time pre-entry course (A2) (DES3906)

Course Adviser: Mr E. Newell

A one-year full-time course designed to give students a practical and academic background before entering the profession. It is the only course offered at a Polytechnic that has the recognition of the National Council for the Training of Journalists, which lays down the syllabus. After successful completion of the course students can expect to be offered posts on provincial newspapers. After suitable practical experience they then take the final part of the examination for the Proficiency Certificate in Journalism.

Entry to the course is through the National Council for the Training of Journalists, and applicants should write to the Director, National Council for the Training of Journalists, Harp House, 179 High Street, Epping, Essex. Interviews and aptitude tests are normally held between March and June. Applicants are advised to apply early in the year.

Qualifications for entry: applicants must be under 20 years of age on the 1st September and possess two G.C.E. 'A' level subjects and three G.C.E. 'O' level subjects (including English). Entry is by examination and interview by a panel of experienced journalists.

Curriculum: public administration, newspaper law, newspaper practice, use of language, shorthand and typewriting.

Course duration: September to July (34 weeks)

Qualification: exemption from appropriate subjects of the examinations for the Proficiency Certificate in Journalism.

Careers in Journalism

There are about 30,000 journalists working in Britain today. The majority are employed on 140 daily and Sunday newspapers, on 1,200 weekly newspapers, and on more than 4,000 magazines and house journals. A considerable number are employed in television, radio and public relations.

A junior journalist has a wide choice of posts after completing his training. He may move to a larger paper, into television or radio, or into public relations. Salary depends upon ability, which can obtain rapid rewards, and promotion to executive level often comes at a younger age than in most professions. There is equal pay for women.

SECRETARIAL

Royal Society of Arts Diploma for Bilingual Secretaries and/or Personal Assistants (post-graduate course) (A2NP) (DES8020)

Course Adviser: Mrs B. D. Cave

A one-year intensive course for young women graduates who have already studied at least one foreign language and who wish to train as highly qualified secretaries specialising in languages. The course involves attendance for thirty hours per week at lectures, seminars and tutorial periods.

Curriculum: office administration, communication, law and procedure of meetings, practical correspondence (shorthand, typewriting, audio-typewriting) and modern foreign languages, particularly French, German, Spanish.

Course duration: September to July (35 weeks)

Examinations: Royal Society of Arts Diploma for Bilingual Secretaries and/or Diploma for Personal Assistants. Single subjects in Shorthand and Advanced Typewriting.

Royal Society of Arts Certificate for Bilingual Secretaries and Diploma for Personal Assistants (post G.C.E, 'A' level course) (A2NP) (DES8023)

Course Adviser: Mrs B. D. Cave

A one-year intensive course for young women of 18 years and over with 'A' level qualifications who have already studied at least one foreign language.

The curriculum is similar to the post-graduate course but the examination in the foreign language will be the Royal Society of Arts Certificate for Bilingual Secretaries.

Secretarial Careers

A study of the national newspapers will show the tremendous opportunities awaiting young women who possess a good educational background and advanced certificates in secretarial subjects, together with the commercial background to foreign languages.

Students who have attended these courses in previous years are now following interesting and worthwhile careers as private secretaries to commercial firms at home and abroad, with the BBC Radio and Television Services, and the Diplomatic Service (Foreign Office).

TEACHING

The Teacher's Certificate of the University of Lancaster (A2) (DES4345)

Course Adviser: Mr A. Hardman

A three-year full-time course organised jointly by the Preston Polytechnic and the Chorley College of Education. The course provides the initial qualification for entry to the teaching profession in Primary and Secondary Schools recognised by the Department of Education and Science, and is specially directed to those wishing to teach mentally handicapped children.

Students who so wish, and who achieve the necessary grades on the Certificate course, will be given the opportunity of studying for a fourth year for the degree of Bachelor of Education, in which Mental Handicap will be one of the options offered.

Qualifications for entry: applicants must attain their 18th birthday on or before the 1st October of the year of entry and have passed at 'O' level G.C.E. in at least five subjects, including English language. Some practical experience of the education of mentally handicapped children is desirable but not essential.

Admission procedure: applicants are required to complete the Polytechnic's standard application form, the Chorley College of Education's application form, and the necessary documentation for Clearing House purposes. These will be sent to enquirers along with the necessary instructions.

1st Year. *Tutors:* Mrs J. Finch and Mrs J. Wragg. *Curriculum:* (1) education, developmental curricular activities, and practice of education at the Chorley College of Education; (2) integrated main/subsidiary course in mental handicap at the Preston Polytechnic. Students will normally spend each week two days at the Preston Polytechnic, two days at the Chorley College of Education and one day in a School for observation and teaching practice.

Course duration: September to July (35 weeks)

2nd Year. *Tutors:* Mr R. G. Hornby and Mr J. Montgomery. *Curriculum:* the subjects and pattern will be as that outlined for the first year.

Course duration: September to July (35 weeks)

Examinations: internal, externally assessed

3rd Year. *Tutors:* Mr A. D. Feachnie and Mrs M. Murray. *Curriculum:* the subjects and pattern will be as that outlined for the first and second years.

Course duration: September to July (35 weeks)

Examinations: internal, externally assessed

Qualification: University of Lancaster Teacher's Certificate

4th Year (B.Ed.) *Tutor:* Mr A. Hardman. *Curriculum:* (1) biological, physiological and environmental factors in mental handicap, (2) the organisation of special educational treatment; (3) sociological implications and assumptions; (4) curriculum development and the mentally handicapped, (a) curriculum theory and practice (b) learning theory and current research, (c) evaluation of published schemes and programmes for children with particular types of mental handicap.

Examinations: internal, externally assessed

Qualification: Bachelor of Education, University of Lancaster (may be awarded as an Honours degree to those who reach a sufficiently high standard in the final examinations).

Careers in Teaching of the Mentally Handicapped

Mental handicap is the result of damage to the brain, which may be caused by injury or disease, may stem from inherited abnormalities, or may be brought about by a wide variety of environmental influences including adverse social conditions. Research is being carried out to extend still further our knowledge of subnormality, and to make possible the development of new specialist techniques in the teaching of the mentally handicapped.

The teaching of the mentally handicapped is a highly specialised field of education since it demands particular knowledge and understanding of the nature of mental handicap as well as the professional expertise of the teacher. There are opportunities for teachers to enter all branches of this highly specialised sphere of education. Mentally handicapped children are educated in Special Schools which are equipped for the purpose. They are staffed by people trained for the task and who will normally be holders of the Teacher's Certificate.

MODERN FOREIGN LANGUAGE FOR BUSINESS

Higher National Diploma

The Department of Business and Administration provides a two-year full-time course and a three-year sandwich course leading to the Higher National Diploma in Business Studies, in which modern foreign language study is offered as an option. The language teaching is undertaken by the Department of Language, Humanities and Special Education. French, German and Spanish are offered and students may select one or two of these for study. Applicants must possess a G.C.E. 'A' level certificate in at least one of the chosen subjects.

GENERAL STUDIES

General Studies, sometimes referred to as Extension Studies, embraces the various courses provided throughout the Polytechnic with the object of broadening the educational experience of the student.

Because of the high degree of specialisation which is a part of today's society the student can give only limited attention to subjects beyond his specialisation. To compensate for this, most courses leading to degree and diploma qualifications include an element of complementary or extension studies. Normally, the first year of a course will deal with the social, recreational and academic aspects of Polytechnic life, the academic studies being concerned with the broad areas of science, technology and human studies in an effort to see these in their relationship one to another. For example, a scientist may have had little contact with engineering or business affairs; a student of languages may know little of the natural sciences or art or construction engineering; a student who has never been a games player at School may, even so, be anxious to remain physically fit or to know the rudiments of games and sports although he will never actively participate.

In addition, residential general studies courses are organised, normally of $2\frac{1}{2}$ days' duration, and held in hotels on the coast. These have included such varied topics as 'Social Order', 'Surrealism in the Cinema', 'Mass Communication', 'Whose Morality', 'Voices of America', 'Specialist in Society', and 'The U.S.S.R.'.

Staff from the Department of Language, Humanities and Special Education organise these studies, the teaching being carried out by staff from all Departments of the Polytechnic. The aim of such studies is to enable students to acquire ancillary skills, to undertake an examination of a technological society and its special problems, and discover or consolidate a personal philosophy towards life.

Department of Management

Head of Department: E. K. Langham, BSc(Econ), AMIMechE, FIProdE

Senior Lecturers

E. L. Bibby, MSc, CEng, MIMechE, MIProdE, MIWM
W. E. Illston, ACMA, MIWSP, MIWM

Lecturer

P. A Flynn, MISM, MIWM, AMBIM
W. T. K. Poyner, BCom, ACIS

The Department of Management

A team of management teaching staff now being formed will undertake the operation and development of the present courses which include: I W M. Certificate, I.W.M. Diploma, N.E.B.S.S., I.W.S.P., D.M.S. for the Public Services, Institute of Marketing Diploma, and management subjects within courses offered by other Departments of the Polytechnic.

It is also the intention of the Department to design and offer a range of functional and general management courses, some of which will be aimed to suit the requirements of specific industries or organisations. In addition the department will, together with the Lancastrian School of Management, develop a range of short courses and management services.

The Department occupies a suite of management teaching and seminar rooms housed on one floor of a new building on the present Polytechnic site. Residential accommodation is available at Heskin Hall Management Centre.

Department of Mathematics and Computer Studies

Head of Department: A. M. Short, BSc, PhD, MInstMC, FInstP

Principal Lecturers

J. S. Moorman, BSc
D. Stelling, BSc, FSS

Senior Lecturers

W. D. Nash, MBCS, AIDP
J. D. Rimmer, BSc, MBCS
A. F. Woodhurst, MSc

Lecturers

G. J. Blackledge, BSc
T. S. Griggs, MPhil, MSc
S. B. Lucas, BSc, AFIMA
W. R. Madill, MA
D. K. Monk, BSc
L. R. Peace, MA, AFIMA, AIS, FSS
R. L. Pickering, MSc
E. Taylor, BSc, DipStats
J. B. Wignall, BA, AFIMA

The Department of Mathematics and Computer Studies

The Department has spacious modern laboratories fully equipped to deal with all relevant methods of numerical mathematics, statistical experimentation and practical work in the basic logic of computer design and analogue computing.

The work of the Department is in three major fields of study: (a) mathematics, (b) computing and data processing, and (c) statistics and operational research. The continuous development of advanced courses in each is planned, providing main study areas for some students and related studies for those whose chief interests are in other disciplines. Special courses in computing techniques and their various applications are arranged as required, usually in the evenings.

The Department maintains close links with industry, with other institutions and with schools. Regular meetings of the Lancashire and North Western Branch of the Institute of Mathematics and it Applications and of the Preston Branch of the British Computer Society are held in the Polytechnic. Non-members of these bodies are welcome to attend their lecture meetings. Not infrequently their topics are of general interest to the layman.

COMPUTER STUDIES

Higher National Diploma in Computer Studies (A2) (DES3912)

Course Adviser: Mr D. Stelling

Subject to final approval by the Department of Education and Science the first year of a three-year sandwich course will be offered from September 1975.

Qualifications for entry: applicants must show evidence of adequate ability in the use of English and must possess one of the following qualifications:

(a) G.C.E. passes in mathematics and three other subjects, one of which must be at 'A' level,
(b) an Ordinary National Certificate or Diploma in Sciences,
(c) an Ordinary National Certificate or Diploma in Engineering,
(d) an Ordinary National Certificate or Diploma in Business Studies with an attainment in mathematics equivalent at least to an 'O' level pass.
(e) G.C.E. passes in three subjects together with the Certificate for Computer Personnel (C.G.L.I.319 or 747) with an attainment in mathematics at least to G.C.E. 'O' level pass standard, or
(f) a qualification deemed by the Joint Committee to be equivalent to any of the above.

1st Year. *Curriculum:* programming, data processing, computer science, mathematics, basic statistics, business organisation, related studies.

Course duration: September to July (35 weeks)

Examinations: internal

2nd Year. *Curriculum:* programming, data processing, computer science, mathematics, statistics, mathematical techniques of management control, related studies.

Industrial period: September to April (26 weeks)

Course duration: April to July (12 weeks)

3rd Year. *Curriculum:* programming, data processing, computer science, systems analysis and methods, mathematical techniques of management control, statistics, business administration, related studies.

Course duration: September to July (35 weeks)

Examinations: internal, externally assessed

Qualification: Higher National Diploma in Computer Studies

Corporate Membership of the British Computer Society

The British Computer Society is the acknowledged professional organisation for computer personnel in this country, its members being engaged in the advancement, teaching and practice of computing and data processing and of their application in industry, commerce and the public service. The academic requirements for Associate Membership are the passing or exemption from Part I of the Society's examination. This exemption will be granted to holders of Higher National Diplomas in Computer Studies. The general education requirements are: G.C.E. 'O' level passes in mathematics, English language and three other subjects, or an approved equivalent.

Careers in Computing

Computers are increasingly playing a major role in the national system of communications, in the analysis of data and in the control of industrial plant of all kinds. The number of qualified computer staff necessary to maintain and develop computer systems in inadequate. This shortage is becoming more acute and could result in the slowing down of technical, industrial and commercial development and ultimately in damage to the national economy.

Computers can radically transform the operations to which they are applied. In addition they can perform operations which could not, in practice, be performed before. For this reason the demand for computer personnel is not only for people who can understand and develop the machines and their associated programming facilities, but also for people who understand the potentialities of computers in relation to particular situations and are able to apply them.

Careers at a senior level can be divided into two groups. There is a relatively small group, employed mainly by computer manufacturers and consultants, who are concerned with design and development and who will, in the main, have honours degrees in computer engineering or mathematics. Equally important is the group of computer managers, systems analysts and programmers who are concerned with the application of computers to particular fields of operation, whether this be data processing for commercial organisations, or production planning and control in scientific, technical and industrial organisations. This particular group needs a sound grounding in data processing, knowledge of the practical possibilities of different types of equipment and, for commercial applications, an appreciation of office practice and business procedures. The Higher National Diploma in Computer Studies is designed to educate students for employment of this kind.

Once the student has acquired a sound knowledge of his firm's organisation and requirements his advancement within the firm can be rapid, particularly if by further study he obtains membership of the British Computer Society. Salaries of Programmers and Systems Analysts are high, reflecting the national shortage of trained personnel.

Department of Mechanical and Production Engineering

Head of Department: D. M. Clapp, BSc(Eng). PhD. CEng. MICE. FIMechE

Principal Lecturers

J. Tirrell, BSc, MIMechE

Senior Lecturers

P. C. De Santos, BSc, CEng, MIProdE
M. J. Manning, BSc, CEng, AFRAeS
A. B. Morrison, BSc, CEng, MIMechE
A. Ottewell, BSc, AIM
H. Roberts, Dipl Ing, CEng, MIMechE
J. R. Smith, MSc, MIMechE
P. Tucker, BScTech, MSc, AMCST, CEng, MIMechE

Lecturers

N. G. Allen, BSc
K. Bennett, CEng, MIMechE, AMIED
R. H. Bryan, MSc, CEng, AFRAeS
J. A. Burton, MSc, CEng, MIMechE, MIProdE
A. Dickson, ASE
J. N. Greenhow, MSc, CEng, MIProdE
R. Hatton, CEng, MIMechE, MIProdE
F. J. McIntyre, CEng, MIProdE
J. E. Meadows, CEng, MIMechE
A. Murray, CEng, MIProdE, MIMechE
J. R. Nuttall, MSc
G. Podmore, CEng, MIMechE, AMIED
F. Tattersall, CEng, MIMechE, MIProdE
R. Vyas, MSc, AIM
M. A. Wahhab, BA, BSc, DIC, CEng, MIProdE, AMInstFuel

The Department of Mechanical and Production Engineering

The Department sees its responsibility to the community as lying in three main areas—the provision of education in the mechanical and production engineering fields for school leavers and students already in employment, the provision of specialist service facilities to industry, and research and development.

A number of advanced courses are offered which lead to professional or technician qualifications in mechanical and production engineering and engineering design. During the period whilst the W. R. Tuson College of Further Education is being built the Department, in conjunction with the Department of Electrical and Electronic Engineering, will accommodate the Ordinary National Diploma in Technology (Engineering), which provides entry to many engineering degree and diploma courses. Within this range of courses, facilities exist for transfer of students where the regulations of appropriate examining bodies permit.

Special courses of varying length are arranged to meet the requirements of local industry. Departmental laboratories house equipment suitable for test and development work in connection with materials testing, stress analysis, fluid mechanics, applied thermodynamics, control and vibration, metrology and machine tool technology. These facilities are offered to industrial organisations and have in the past contributed usefully to the solution of their technical problems. Collaboration with industry is welcomed. The Department is a member of the Department of Industry's 'Interlab' scheme.

There is an active interest in applied research and many staff are involved in projects for local industry and, in collaboration with universities or the Council for National Academic Awards, for the award of higher degrees. Much of this work lies in the field of production engineering.

B.Sc. in Mechanical Engineering of the Council for National Academic Awards (A1) (DES1467)

Course Adviser: Mr P. Tucker

A four-year 'thick sandwich' course leading to the award of the Degree of Bachelor of Science in Mechanical Engineering. The third year of the course will be spent in Industry. This course started in 1974, but details of subsequent years are included for information.

Qualifications for entry: normally students must hold either:

(a) a General Certificate of Education with passes in five subjects, of which two must be at Advanced level. The subjects passed must include mathematics, physics and preferably English language. The Advanced level subjects must normally be mathematics (pure, or pure and applied) and either physics or engineering science.

(b) a General Certificate of Education with passes in five subjects, of which three must be at Advanced level. The subjects passed must include mathematics, physics and preferably English language. The Advanced level subjects must be three of the following: mathematics (pure, or pure and applied), further mathematics, physics/engineering science, or

(c) an Ordinary National Diploma in Engineering or Technology (Engineering); an Ordinary National Certificate in Engineering. In such a case passes of sufficient merit in at least three appropriate subjects are required, one of which must be mathematics, or

(d) in exceptional cases, qualifications equivalent to the above may be accepted, at the discretion of the Director.

1st Year (A1) (DES1467). This is shared by students pursuing the B.Sc. course in Electrical and Electronic Engineering, so the choice of discipline may be deferred until the end of this year. *Curriculum:* mathematics and computer studies, electrical science, mechanical science, physical science, logic and electronics, data acquisition and processing, related studies and an appropriate general study (which may be a European language).

Course duration: September to July (34 weeks)

Examinations: internal

2nd Year (A1) (DES1467). *Curriculum:* mathematics, related studies, instrumentation and control, thermomechanics of fluids, dynamics of mechanical systems, properties of mechanics of solids, elements of design and an appropriate general study.

Course duration: October to June (34 weeks)

Examinations: internal

3rd Year. Industrial experience

4th Year (A1) (DES1467). *Curriculum:* related studies, mathematics, thermomechanics of fluids, mechanics of solids, control engineering, fluid power engineering or structures, together with a project.

Course duration: October to June (34 weeks)

Examinations: internal, externally assessed

Qualification: successful completion of the course results in the award of the degree of Bachelor of Science in Mechanical Engineering

Polytechnic Diploma in Mechanical Engineering

Course Adviser: Mr M. J. Manning

A four-year sandwich course, accepting both Polytechnic and Industry-based students. A Higher National Diploma is awarded upon the successful completion of the third year, and this accords exemption from the C.E.I. Part I Examinations.

Qualifications for entry: normally, students must be 18 years of age on 1st September of the year of entry and hold either (a) an Ordinary National Certificate or Diploma in Engineering or in Mechanical or Electrical Engineering with passes, preferably at 50% level, at the final level in mathematics, applied mechanics and one other subject, or (b) the G.C.E. in five subjects, two of which must be mathematics and physics, one of these two having been passed at advanced level and the other having been studied to the same level (a C.S.E. grade 1 pass in an approved subject may be accepted as an alternative to a G.C.E. 'O' level pass in that subject), or (c) a Mechanical Engineering Technician's Certificate, Parts I and II (C.G.L.I. course No. 293), together with the completion of appropriate additional study arranged by the Polytechnic, or (d) other qualifications deemed equivalent to the above by the Joint Committee for the award of Diplomas. Students who have no pass in English language at G.C.E. 'O' level must sit for and pass this subject before entering the second year of the course. Students who have not passed engineering drawing at either G.C.E. 'O' level or O.N.C. must take additional classes in the subject in the first year.

1st Year (A2) (DES1088). *Tutors:* Mr A. B. Morrison and Mr R. Bryan. *Curriculum:* the first year is common for the Diplomas in Mechanical Engineering, Mechanical Engineering (Industrial Design) and Production Engineering, and includes mathematics, materials science, thermodynamics of fluids, mechanics of solids, engineering drawing, graphics and exploration of form, electrical studies and general studies. In addition, entrants from G.C.E. 'A' level and O.N.C./O.N.D. courses will spend 12 of the 36 weeks in complementary engineering studies, in polytechnic workshops and associated laboratories. Entrants from the Mechanical Engineering Technician's course will have a 6 week introductory course, and spend only 6 weeks in complementary engineering studies. The curriculum includes a 3-day residential course.

Course duration: September to July (36 weeks)

Examinations: internal (progressive assessment)

2nd Year (A2) (DES1088). *Tutor:* Mr R. Bryan. *Curriculum:* mathematics, materials and structures, engineering dynamics, thermodynamics, mechanics of fluids, electrical studies *or* manufacturing technology, engineering design and general studies. The curriculum includes a 3-day residential course.

Course duration: September to March (24 weeks)

Examinations: internal

3rd Year (A2) (DES1088). *Tutor:* Mr P. Tucker. *Curriculum:* mathematics, stress analysis and material properties, engineering dynamics, engineering thermodynamics, engineering fluid mechanics, electrotechnology or manufacturing technology, engineering design and engineer in society. The curriculum includes a 3-day residential course.

Course duration: January to July, 1975 (23 weeks)

Examinations: H.N.D. assessed in 6 subjects, together with assessed design project.

Qualification: Higher National Diploma in Mechanical Engineering on passing five assessed subjects including stress analysis and material properties, and engineering dynamics. Exemption from C.E.I. Part 1 examinations.

4th Year (A1) (DES3708). *Tutor:* Mr M. J. Manning. *Curriculum:* the engineer in society, properties and mechanics of materials and an approved selection of three from: engineering thermodynamics, fluid mechanics, mechanics of machines, production technology, mathematics, physical and mechanical metallurgy, together with design or laboratory projects.

Course duration: September to July (36 weeks)

Examinations: Polytechnic Diploma. Students may also enter for the C.E.I. Part 2 Examinations in the engineer in society and five of the subjects listed above.

Qualification: successful completion of the course results in the award of the Polytechnic Diploma.

Careers in Mechanical Engineering

The Mechanical Engineer makes a contribution to almost every aspect of modern life, from agriculture to aerospace. He is responsible for the design and development of products ranging from process timers small enough to swallow to turbines developing a million kilowatts each. His work may involve co-operation with surgeons and physicians in the bio-engineering field; with chemists in the design of pill-making machinery or oil refineries. The astronomer relies on the engineer for his giant telescopes, the tailor for his sewing machine, and the school boy for his bicycle. It is, indeed, difficult to name a field in which the Mechanical Engineer is not involved. It follows that the work of the Mechanical Engineer can be more diverse than that of members of many other professions. His career may, for example, begin in railway work, continue in the design of fire pumps, and end as a technical director of a firm of shipbuilders. On the other hand, engineers who work in the same branch throughout life can find technical progress so rapid that new and intriguing problems are constantly arising. Even in a traditional field like steam power plant, turbine engineers are today designing machines forty times as powerful as those in use when they started work. As never before, engineering is a profession as interesting as it is socially relevant.

Within any branch of mechanical engineering is a wide spectrum of activities—design, development, research, technical sales, operation, management and teaching. The vast range of creative activity needed in the development and improvement of current products, and in contriving new devices to meet needs not yet known, offers an exciting challenge to all young Chartered Mechanical Engineers.

Polytechnic Diploma in Mechanical Engineering (Industrial Design Option)

Course Adviser: Mr H. Roberts

A four-year sandwich course, accepting both Polytechnic and Industry-based students. A Higher National Diploma is awarded upon the successful completion of the third year, and this accords exemption from the C.E.I. Part 1 Examinations.

Qualifications for entry: as detailed in the course leading to the Polytechnic Diploma in Mechanical Engineering.

1st Year (A2) (DES1088). *Tutors:* Mr A. B. Morrison and Mr R. Bryan. The curriculum of the first year is common for the Diplomas in Mechanical Engineering, Mechanical Engineering (Industrial Design) and Production Engineering. The curriculum includes a 3-day residential course.

Course duration: September to July (36 weeks)

Examinations: internal (progressive assessment)

2nd Year (A2) (DES1088). *Tutor:* Mr R. Bryan *Curriculum:* this is common with the 2nd year of the College Diploma in Mechanical Engineering. The curriculum includes a 3-day residential course.

Course duration: September to March (24 weeks)

Examinations: internal

3rd Year (A2) (DES1088). *Tutor:* Mr H. Roberts. *Curriculum:* during the first term students will study a "Design Module" including aesthetics of industrial design, design studio, engineering design, ergonomics, costing, general studies and will complete a design project. The curriculum in the second and third terms is common with the 3rd year of the Polytechnic Diploma in Mechanical Engineering. The curriculum includes a 3-day residential course.

Course duation: September to July (36 weeks)

Examinations: Higher National Diploma assessed in 6 subjects and assessed design project. Design module will be assessed by project and coursework.

Qualifications: Higher National Diploma in Mechanical Engineering on passing five assessed subjects, including strength of materials and engineering dynamics. Supplementary subject "Design Module". Exemption from C.E.I. Part 1 examinations.

4th Year (A1) (DES3708). *Tutor:* Mr M. J. Manning. *Curriculum:* the engineer in society, properties and mechanics of materials and an approved selection of three from: engineering thermodynamics, fluid mechanics, mechanics of machines, production technology, mathematics, physical and mechanical metallurgy, together with design or laboratory projects.

Course duration: September to July (36 weeks)

Examinations: Polytechnic Diploma. Students may also enter for the C.E.I. Part 2 Examinations in the engineer in society and five of the subjects listed above.

Qualification: Successful completion of the course results in the award of the Polytechnic Diploma.

Careers in Industrial Design

The term 'Industrial Design' requires explanation, as all engineering designers are engaged in one industry or another, and most engineers are to a greater or lesser degree designers. In the field of the creative artist, however, the design of articles for industrial (as opposed to craft) production is a relatively new activity, and the term 'Industrial Designer' was conceived as a generic description for those so occupied. It has now been extended to cover all those engaged in the design of engineering products in which aesthetic consideration forms a major factor in the design.

The profession of Industrial Designer offers a new and exciting field of endeavour in which emphasis is on imagination and creative thought, supported by an appreciation of the real needs of society and a sound knowledge of engineering. Opportunities for a young person with these attributes are considerable. He or she may form part of a design team in a large organisation, may be a consultant—either in partnership or free-lance—or may be the sole designer, with draughtsmen working for him, or her, in a smaller firm.

It is important to appreciate that whilst many Industrial Designers are at present working for firms marketing consumer goods—washing machines, refrigerators and the like—an increasing number are engaged in both light and heavy engineering. The improved appearance and ease of operation of modern machine tools—some costing hundreds of thousands of pounds—is due to their efforts. Dockside and steelworks cranes of up to 250 ton capacity, earth-moving machines, electric motors, pumps, are all examples of engineering products on which the Industrial Designer has had a marked influence. It is perhaps worth emphasising that in many cases the new design is cheaper than the old, and that the services of the Industrial Designer are being called for in the marketing departments of many large firms.

Polytechnic Diploma in Production Engineering

Course Adviser: Mr P. De Santos

A four-year sandwich course, accepting both Polytechnic and Industry-based students. A Higher National Diploma is awarded upon the successful completion of the third year, and this accords exemption from the C.E.I. Part 1 Examinations.

Qualifications for entry: as detailed in the course leading to the Polytechnic Diploma in Mechanical Engineering.

1st Year (A2) (DES1088). *Tutors:* Mr A. B. Morrison and Mr R. Bryan. The curriculum of the first year is common for the Diplomas in Mechanical Engineering, Mechanical Engineering (Industrial Design) and Production Engineering. The curriculum includes a 3-day residential course.

Course duration: September to July (36 weeks)

Examinations: internal (progressive assessment)

2nd Year (A2) (DES1088). *Tutor:* Mr J. Greenhow. *Curriculum:* mathematics, materials and structures, engineering dynamics, electrical studies, general studies, manufacturing process technology, manufacturing plant and control technology, analysis of manufacturing systems.

Course duration: September to March (24 weeks)

Examinations: internal

3rd Year (A2) (DES1088). *Tutor:* Mr J. Greenhow. *Curriculum:* machining and forming technology, manufacturing plant, manufacturing control, industrial engineering, mechanics of machines, mechanics and properties of materials, mathematics and statistics, process metallurgy, and general studies. The curriculum includes a 3-day residential course.

Course duration: September to March (24 weeks)

Examinations: H.N.D. assessed in 7 subjects

Qualification: Higher National Diploma in Production Engineering on passing 5 assessed subjects. Exemption from C.E.I. Part 1 Examinations.

4th Year (A1) (DES3708). *Tutor:* Mr P. De Santos. *Curriculum:* the engineer in society, production technology, industrial engineering III, together with two subjects from the following: properties and mechanics of materials, organisation of manufacturing plant, mechanics of machines, systems engineering and control technology, operational research, process metallurgy, together with design or laboratory projects.

Course duration: September to July (36 weeks)

Examinations: Polytechnic Diploma. Students may also enter for the C.E.I. Part 2 Examinations in the engineer in society and five of the subjects listed above.

Qualification: Successful completion of the course results in the award of the Polytechnic Diploma.

Careers in Production Engineering

Every device required by man, from safety pins to space vehicles, must be manufactured. It is the responsibility of the Production Engineer to translate the ideas of the scientist and the designs of the engineer into reality. He or she will be responsible for devising methods of manufacture and supplies of materials, for organising the flow of work and, in general, for managing the complete process from raw material to finished product.

The work may range from production control—the application of scientific principles to systems of manufacture and management—to detailed investigation and research into methods of forming materials. Extremely rapid developments are taking place in the field of automation, and the application of computers to plant and machine tools. In the field of metal shaping and fabrication many exciting avenues are opening, such as the application of lasers, electron beam welding, and processing in vacuo.

The Production Engineer must be versatile, technically competent, and able to make decisions. Much of the work will be involved in human relationships—the majority of senior production engineers are managers—and there is ample opportunity for those with a flair in this direction.

Membership of Professional Institutions

All students accepted into a professional course are advised to apply for student membership of the appropriate Engineering Institution; such membership has many advantages. Course Advisers can supply all necessary information and application forms.

The title of 'Chartered Engineer' (C.Eng.) is awarded by the Council of Engineering Institutions (C.E.I.) which operates under Royal Charter and represents all the major Institutions*. To achieve this title, it is necessary both to meet the academic requirements of the Council of Engineering Institutions and to be elected into corporate membership of one of the constituent Institutions of the Council.

* The constituent members of the Council of Engineering Institutions are:

The Royal Aeronautical Society
The Institution of Chemical Engineers
The Institution of Civil Engineers
The Institution of Electrical Engineers
The Institution of Gas Engineers
The Institution of Marine Engineers
The Institution of Electronic and Radio Engineers
The Institution of Mechanical Engineers
The Institution of Mining Engineers
The Institution of Mining and Metallurgy
The Institution of Municipal Engineers
Royal Institution of Naval Architects
The Institution of Production Engineers
The Institution of Structural Engineers

The C.E.I. examination is in two parts. Part 1 is common to all branches of engineering. Part 2 comprises one subject which is compulsory for all candidates, together with five others chosen from a wide variety of alternatives. Each Engineering Institution is free to lay down which of these alternatives must be passed to qualify for membership; most have specified two only, leaving the candidate to choose the others to suit his personal interests or the course in which he is studying. The standard of the Part 2 examination is that of a University Degree in Engineering. The other requirements of corporate membership (general education, industrial training, and responsible experience) are laid down by the particular Institution into which an engineer seeks election.

Department of Physics

Head of Department: A. M. Short, BSc, PhD MInstMC, FInstP

Principal Lecturers

V. Barocas, PhD, FRAS, FBHI, FInstP
R. J. Trebilcock, MSc, MInstP

Senior Lecturers

A. R. Curtis, MSc, PhD, ARCS, MInstP
G. R. Marr, MSc, MInstP
M. A. S. Sweet, BSc, PhD, MInstP
E. Webster, BSc, PhD, MInstP
G. Worrall, BSc, PhD

Lecturers

P. A. Bates, BSc, PhD, MInstP
P. R. Bissell, MSc, MInstP
A. Christy, BSc, PhD, MInstP
M. C. Holmes, BSc, PhD, AInstP
A. R. Howells, BSc, MInstP
J. W. Menzies, BSc, PhD, FRAS
D. R. Peck, BSc, PhD, MInstP
C. H. Scott, MSc, FRAS

Research Assistants

P. Johnson, GradInstP
C. J. Wareing, GradInstP

The Department of Physics

The Department aims to provide an environment in which the individual talents and interests of students can prosper, and there is thus a bias towards flexible course structures which allow for inter-disciplinary as well as single subject studies.

The Department provides advanced full-time and sandwich courses, including degree courses in physics and astronomy, the Graduateship of the Institute of Physics and the Higher National Diploma in Physics. Each full-time and sandwich course student has two tutors; one to provide guidance on academic matters, the other to offer help and guidance of a personal nature.

A wide range of intermediate and advanced part-time courses is also offered including the B.Sc. Physics and the Higher National Certificate in Applied Physics. Part-time studies in the Department offer the advantage of study in an environment which can only be provided in an institution having a wide range of full-time courses and the consequent high calibre of staff and generous provision of equipment.

Able graduates are encouraged to undertake postgraduate research directed at higher degrees with one of the departmental research teams and the Department is able to offer a limited number of research studentships for this purpose. Research activities receive external support and the volume of this support is increasing.

Close links are maintained with industry and regular meetings of professional bodies are held in the Department, including meetings of the Lancaster branch of the Institute of Physics and the North Lancashire Physics Teachers Centre.

The Department houses a wide range of items of advanced teaching and research equipment including an electron microscope, general electronic equipment, spectrographs, measuring devices, photographic and radiographic equipment, cryostats, high vacuum equipment, acoustic devices, ultrasonic and non-destructive testing equipment and microwave apparatus. Collaboration with industry is welcomed and subject to availability the equipment may be used by qualified technologists. Training courses on special techniques will be given as required.

Meteorological records started in Preston in 1876. The Polytechnic facilities for Astronomy and Meteorology include a meteorological station and two observatories. Facilities available to students include a 20cm refractor, an 8cm reversible transit instrument, and a 39cm astrograph. There is a wide range of supporting equipment.

ASTRONOMY, PHYSICS AND MATHEMATICS

B.Sc. (Sciences) of the University of London (A1) (DES2149)

Course Adviser: Mr R. J. Trebilcock

A three-year full-time course for science qualified students leading to a two-subject degree from the following offered in this Polytechnic: Astronomy, Physics, Biochemistry, Biology, Mathematical Methods, Physiology and Chemistry. The course is designed to give a broad education in science, with particular emphasis on physics and its applications. There are many careers in science open to such two-subject specialists, but those wishing to extend their studies further in a particular field would normally do so by pursuing a course of post-graduate research leading to a higher degree. The department co-operates with the department of Chemistry and Biology in providing the alternative main subject options of Astronomy and Physics (see pages 32-33).

To qualify for the degree, a candidate should have completed satisfactory courses and have reached acceptable standards in the examinations set by the University of London in *three* subjects at Standard I and *two* main subjects at Standard II. Standard I subjects require the equivalent of 1/3rd year of full-time study and Standard II subjects require one year of full-time study beyond Standard I.

Qualifications for entry: these are as detailed on page 33. Candidates are advised to qualify in physics and mathematics at G.C.E. 'A' level, or in an equivalent combination of two subjects, e.g. Physical Science and Statistics, Applied Mathematics and Pure Mathematics.

1st Year. *Tutor:* Dr D. R. Peck. *Curriculum:* physics I, mathematical methods I and one other subject chosen from chemistry I, physiology I or biology I.

Course duration: September to July (35 weeks)

Examinations: University of London

2nd Year, Physics II. *Tutor:* Mr R. J. Trebilcock. *Curriculum:* general properties of matter; atomic, electron and nuclear physics; heat and thermodynamics; acoustics; optics, electricity, magnetism and electronics; mathematics and computing.

Course duration: September to July (35 weeks)

Examinations: University of London

3rd Year, Astronomy II. *Tutor:* Dr V. Barocas. *Curriculum:* descriptive astronomy, spherical astronomy, planetary motions, astrophysics, radiation laws, spectroscopy, atomic excitation, stellar evolution, solar terrestrial relations, radio astronomy; use of equatorial telescope and transit instrument, planetary and solar observations, double stars, celestial photography, use of astrograph and spectrograph, photo-electric photometry.

Course duration: September to July (35 weeks)

Examinations: University of London

Qualification: Bachelor of Science of the University of London

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APPLIED PHYSICS

Graduateship of the Institute of Physics: four-year course

Course Adviser: Mr G. R. Marr

A sandwich course in which the Higher National Diploma in Applied Physics is taken at the end of the third year; good marks in the third year examination secure exemption from Part I of the Institute's Graduateship examination. Success in the Part II examination, which is taken at the end of the fourth year, gives the academic qualifications for admission to Associate Membership.

Qualifications for entry:

1. Students must have studied both physics and mathematics to G.C.E. Advanced level standard and passed in one of these subjects. In some instances students who are admitted with a single 'A' level pass may have to undertake supplementary studies in either physics or mathematics and sit an examination at the end of their first term in the Polytechnic, or
2. An Ordinary National Certificate in Sciences with passes in the following subjects: (a) basic physics, basic mathematics and elective physics; or (b) basic physics with a mark of at least 50%, basic mathematics and elective mathematics; or (c) basic physics, basic mathematics and a subject comprising approved sections of the elective physics and elective mathematics syllabuses, or
3. An Ordinary National Diploma in Sciences, normally including passes in major physics and minor mathematics, or
4. An Ordinary National Certificate in Applied Physics, or
5. An Ordinary National Certificate in Engineering with credits in Physics II and electrical engineering 'A' and passes in mathematics and one other subject, or
6. A qualification deemed by the Physics Joint Committee to be equivalent to any of the above.

1st Year (A2) (DES1093). *Tutor:* Mr P. R. Bissell. *Curriculum:* physics; electricity and magnetism, properties of matter, heat and thermodynamics, optics, atomic and nuclear physics; high vacuum technology; spectroscopy; electronics; chemical and physical properties of materials; mathematics: complex numbers, differential equations, vector algebra; engineering drawing; general studies.

Course duration: September to July (35 weeks)

Examinations: internal

2nd Year (A2) (DES1093). *Tutor:* Dr A. Christy. *Curriculum:* physics, electricity and magnetism 2, optics 2, wave motion and sound, thermodynamics 2; X-ray technology; electronics; instrumentation and control; nuclear physics 2; mathematics: further integration, statistics, computer programming; related studies.

Course duration: April to July (12 weeks)

Examinations: internal

3rd Year (A2) (DES1093). *Tutor:* Mr G. R. Marr. *Curriculum:* physics: quantum mechanics, atomic physics, statistical mechanics, thermodynamics, low temperatures, relativity, optics; mathematics: differential equations, vector calculus, fluid flow, small oscillations, statistics; electronics: amplifiers, modulation, microwaves, logic circuits, analogue computers; instrumentation and control; atomic and nuclear physics; non-destructive testing; applied acoustics; related studies.

Course duration: September to July (35 weeks)

Examinations: H.N.D. in Applied Physics

Qualification: Associateship of the Institute of Physics

4th Year (A1) (DES2147). *Tutor:* Dr M. A. S. Sweet. *Curriculum:* physics: thermodynamics, optics, solid state physics; electronics or high energy radiations or applied acoustics.

Course duration: September to July (36 weeks)

Examinations: Graduateship of the Institute of Physics

Qualification: Associate Membership of the Institute of Physics

Graduateship of the Institute of Physics: one-year course
(A1) (DES2147)

Course Adviser: Dr M. A. S. Sweet

A one-year course for students with qualifications in science or engineering. The aim of the course is to secure corporate membership of the Institute of Physics for physicists with intermediate qualifications and also for engineers and scientists who aspire to senior positions and need to have professional membership of one or more corporate bodies. The course includes a study in depth of some aspect of physics. This study may be in either a branch of pure physics such as nuclear physics, or in an applied subject such as acoustics or non-destructive testing.

Qualifications for entry: the Associateship of the Institute of Physics or a qualification deemed by the Physics Joint Committee to be equivalent; examples of such equivalents are:

1. The H.N.D. in Applied Physics including a pass in mathematics, or the H.N.D. in Electrical Engineering when obtained at the Malvern College of Electronics.
2. The H.N.C. in Applied Physics with an approved group of supplementary subjects.
3. The H.N.C. in Applied Physics which has been judged as being of sufficiently high all round standard, and followed by a further year of approved study.
4. A degree in physics at ordinary or pass level.*
5. Degrees in Materials Science, Physical Metallurgy, Physical Electronics, Electrical Engineering, Chemical Physics, Theoretical Physics and Mathematical Science.*
6. Candidates who have recently been unsuccessful in the final examination of an honours degree course in physics at a U.K. university. Such candidates should apply direct to the Institute of Physics for details of procedure.

* Applicants who wish to enter the course under sections 4 and 5 should write to the Head of the Department of Physics giving full details of their qualifications and of courses which they have undertaken.

Tutor: Dr M. A. S. Sweet. *Curriculum:* physics: thermodynamics, optics, solid state physics; electronics or high energy radiations or applied acoustics.

Course duration: September to July (36 weeks)

Examinations: Graduateship of the Institute of Physics

Qualification: Associate Membership of the Institute of Physics

Corporate Membership of the Institute of Physics

The Institute of Physics is the acknowledged professional organisation for physicists in this country. Its members are engaged in the advancement, teaching and practice of physics and its applications in industry and the public service.

The academic requirements for full professional membership are not less than those required for a good honours degree at a British polytechnic or university. The Graduateship examination is recognised by the Institute, polytechnics and universities as a good honours degree. The Graduateship examination satisfies the entry requirements of polytechnic and university research schools, and candidates who obtain either middle or upper honours in the examination are eligible for Science Research Council grants.

There are four grades of corporate membership: Associateship, Associate Membership, Membership and Fellowship. Candidates for either of the first two grades must have (a) an acceptable level of general education and (b) suitable academic qualifications in physics. Academic requirements for admission to Associateship are: either a Higher National Diploma in Applied Physics, or a Higher National Certificate in Applied Physics together with an approved endorsement, or a degree in physics awarded by a British polytechnic or university. Requirements for admission to Associate Membership are either the Graduateship in Physics or a First or Upper Second class degree awarded by a British polytechnic or university. Associate Members of the Institute and others holding equivalent qualifications may apply for full Membership after suitable research, teaching or industrial experience.

Careers in Astronomy and Physics

Careers in astronomy or physics are open to suitably qualified persons in observatories, universities, hospitals, teaching establishments, government service and industry.

Industrial opportunities are concerned with the application of all types of instruments, ranging from searches for raw materials such as oil and natural gas to control of manufacturing processes, and the properties of finished products. Typical problems involve the use of electronics and the application of X- and Y-radiography, together with non-destructive methods of testing. Closely allied is the work of the health physicist who is concerned with the measurement of radiation and the development of adequate personal protection.

In the long term good career prospects imply full professional recognition of competence by membership of one or more of the major professional bodies such as the Institute of Physics. Courses in the department are designed to facilitate such recognition.

Department of Social Studies

Head of Department: M. North, MSc (Econ), PhD

Principal Lecturers

B. L. Gray, MA
R. Quinn, BA, Dip Econ and Pol
M. A. Stone, BSc

Senior Lecturers

Miss M. A. Coulson, BA
R. D. Everett, BA, Dip App Soc Stud
R. Gordon, BSc(Econ)
J. W. Jones, BSc(Econ), BPhil
Mrs S. M. Kerrigan, BA, Cert in Child Care
Mrs A. Krejcova, PhD
M. L. McCullough, BSc, PhD
Miss M. M. Poyser, SRN, SCM, HVTutor Cert
J. S. Washington, BA, Cert in Psychiatric Social Work

Lecturers

A. B. Anderson, MA
Miss J. Barker, Cert in Psychiatric Social Work
M. Fitch, BA
Mrs A. M. Harris, HO Probation Cert
R. S. Kelly, BSc(Soc)
M. F. McCarthy, MA
A. J. McHale, Cert Ed, BEd
A. Pratt, BA(Econ)
B. Scammells, BA
C. D. Smith, MA
Mrs P. D. Stroud, SRN, HVCert
F. M. Toates, BSc, MSc, PhD
Mrs H. F. Unwin, Cert in App Soc Stud

The Department of Social Studies

Courses in social sciences are conducted in this Department, and include degree, diploma and certificate courses in Sociology, Social Studies, Applied Social Studies, Social Work, Health Visiting, and Psychology. At the present time the bulk of the work is carried out in Robin House, a five-storey block adjacent to the main campus, in which are to be found general and specially equipped lecture and tutorial rooms, study rooms, a common room with coffee bar, and academic and secretarial staffrooms.

Many of the courses offered at present lead to professional status, and consequently students spend an appreciable amount of time in practical work placements in Social Work Agencies, Schools, Social Service Departments, etc. Strong links have been forged with Education and Social Service Authorities and Training Officers in industry and commerce, who together seek places on our courses for their staff and provide career opportunities for many of our students. Staff of the Department carry out research projects which are closely linked with the teaching undertaken by staff, which is of benefit both to students on our courses and local industrial, commercial and social enterprises.

B.A. (Honours) Degree in Psychology (A1) (DES4211)

Course Adviser: Mr M. A. Stone

A three-year full-time course leading to the award of the Bachelor of Arts Degree with Honours in Psychology. The course has been designed for students considering a career in Psychology and will qualify graduates for entry to the many post-graduate courses available. The first two years concentrate on providing a basic and comprehensive education in Psychology and also include ancillary courses in related areas. The final year gives the student the opportunity to specialise in those areas which he finds interesting and also involves a research project supervised by the appropriate staff specialist.

Qualifications for entry: (a) a General Certificate of Education with passes in five subjects, of which two must be at Advanced level or (b) a General Certificate of Education with passes in four subjects, of which three must be at Advanced level. Candidates for admission to this course will normally be expected to have obtained a pass at Ordinary level in Mathematics. Qualifications deemed by the Polytechnic and the CNAA to be of equivalent standard to those stated in the preceding paragraphs may be accepted as satisfying the entrance requirement.

1st Year. *Curriculum:* animal behaviour, human experimental psychology, individual differences, statistics and experimental design, laboratory course, biological bases of behaviour, history of science, methods of social research, mathematical methods.*

Course duration: October to June (31 weeks)

2nd Year. *Curriculum:* psychobiology, personality, human information processing, social psychology, developmental psychology, laboratory course, statistics and experimental design, computer techniques,* linguistics.

Course duration: October to June (30 weeks)

3rd Year. *Curriculum:* optional courses with any two from psychobiology, human performance, abnormal psychology, developmental psychology, social psychology; compulsory courses are theoretical issues in psychology, advanced cognitive psychology and a project.

Course duration: October to June (30 weeks)

* not subject to examination.

Careers in Psychology

The traditional fields of employment for the psychology graduate are Educational, Clinical and Occupational Psychology. To gain entry to a post-graduate course leading to a professional qualification in one of these areas, an honours degree, in which psychology is a major field of study, is necessary. Although there is a national shortage of qualified psychologists the competition for places on these courses is very severe and candidates are normally expected to obtain a good honours degree.

Many graduates remain in the academic world and take a post-graduate course leading to a higher degree by research and then take up teaching or research posts in Polytechnics or Universities. It is expected that opportunities for post-graduate research will be available in the near future in this Department.

Further information on post-graduate courses and careers in psychology can be obtained by writing to the British Psychological Society, 18-19 Albemarle Street, London W1X 4DN.

SOCIOLOGY

B.Sc. (Honours) in Sociology (Branch III) of the University of London (A1) (DES2302)

Course Adviser: Mr R. Quinn

A three-year full-time honours degree course for those who contemplate careers in social work, or in industry or commerce, in management or personnel management. Candidates must be registered as External Students with the University of London. Enquiries about admission to the course should be addressed to the Academic Registrar, Preston Polytechnic, Corporation Street, Preston PR1 2TQ (and not to the Universities' Central Council for Admissions).

Qualifications for entry: (a) five G.C.E. subjects including two at Advanced level, or (b) four G.C.E. subjects including three at Advanced level, or (c) matriculation in the University of London.

1st Year. *Tutor:* Mr R. Quinn. *Curriculum:* British social history in the 19th and 20th centuries; British political, administrative and legal institutions; economics; British social policy and administration; social investigation; social theory; general studies.

Course duration: This course is being phased out and it is improbable that there will be a first year in 1975-76.

2nd Year. *Tutor:* Mr A. Pratt. *Curriculum:* British social history in the 19th and 20th centuries; British political, administrative and legal institutions; economics; British social policy and administration; social investigation; social theory; one of the following optional subjects: the family in law and in society, industrial sociology, criminology; general studies.

Course duration: September to July (35 weeks)

Examinations: internal

3rd Year. *Tutor:* Mr J. Hampson. *Curriculum:* British social history in the 19th and 20th centuries; British political, administrative and legal institutions; economics; British social policy and administration; social investigation; social theory; one of the following optional subjects: the family in law and in society, industrial sociology, criminology; general studies.

Course duration: September to July (35 weeks)

Examinations: external

Qualification: B.Sc. (Honours) in Sociology of the University of London

Careers in Sociology

The subject matter of the social sciences is that most fascinating and important topic of all—people: how they behave as individuals and in groups, how society changes and how it is governed; how social problems arise and what society does

to cure them. Though these questions are as old as man himself, the science which seeks to answer them systematically, which is sociology, and the group of professions based upon it are relatively new.

Graduates in sociology can enter industry as management trainees, as line or personnel managers, or they may work in marketing or research. The course which leads to the B.Sc. Sociology at this Polytechnic is particularly suitable for students thinking of careers in social administration and social work, or in teaching.

SOCIAL WORK

Polytechnic Diploma in Applied Social Studies (Post-graduate)
(A2) (DES1214)

Course Adviser: Mr B. L. Gray

A one-year full-time course leading to the Diploma in Applied Social Studies awarded by the Polytechnic and to the Certificate of Qualification in Social Work awarded by the Central Council for Education and Training in Social Work.

Qualifications for entry: applicants must be at least 21 years of age and possess either (a) a relevant degree with fieldwork experience gained either as part of an undergraduate course or in post, or (b) a Diploma in Social Studies or Social Administration together with fieldwork experience.

Application procedure: the course begins in September each year. Selection will be by interview and references will be required from academic tutors and a fieldwork supervisor. Information and application forms should be obtained from The Clearing House for Post Graduate Courses Leading to a Professional Qualification in Social Work, c/o Social Work Advisory Service, 26 Bloomsbury Way, London WC1A 2SR.

Curriculum: theory and practice of social work including casework, groupwork and community work, human growth and behaviour, social administration and management of the social services, law, psychiatry, social aspects of health and disease, T-groups, and social work research.

The fieldwork component of the course is arranged on a concurrent basis with the theoretical teaching, students spending two days in the Polytechnic and three days a week in placement until the final part of the course which is a block placement. The first placement runs for the first and second terms, and the second extends over the third term and continues as a block until September. Arrangements are made for some students to remain in one agency for the whole of the fieldwork placement. Discussions regarding placements are held with students, and their preference and experience are fully considered before coming to a final decision. The range of fieldwork placements is fairly wide and it is hoped to extend the opportunities for experience in group and community work.

Course duration: September 1975 to September 1976 (Theory 22 weeks, Fieldwork 21 weeks)

Assessment: final assessment will be made by periodic evaluation of course work, including written work, contribution to discussions and two long essays. An oral examination may be required.

Polytechnic Diploma in Social Work (A2) (DES1214)

Course Adviser: Mr J. Washington

A two-year full-time course leading to the Diploma in Social Work awarded by the Polytechnic and the Certificate of Qualification in Social Work awarded by the Central Council for Education and Training in Social Work. The aim of the course is to train candidates to become Social Workers with a knowledge of a wide range of problems.

Qualifications for entry: applicants must be aged 20 or over at the start of the course. They must have the personal qualities necessary for social work and the academic ability to benefit from the course. Candidates under 25 will normally also be required to hold 5 G.C.E. 'O' level passes or 2 'A' level passes, English language to be among the pass subjects. In addition, candidates over 25 will have to show some evidence of recent study and ability to cope with the academic demands of the course. All candidates will have to take part in education testing at the Polytechnic prior to the selection interview.

Application procedure: application forms can be obtained from the Senior Tutor in Social Work, Department of Social Studies, Preston Polytechnic, Robin House, Fylde Street, Preston PR1 7DR. Applications are accepted up to January 31st in the year of the course commencement. Selection takes place during March and April in each year.

Curriculum: subjects studied include human growth and behaviour, sociology, social work methods and practice, aspects of British social history, law for social workers, family health and communications. These will be given at the Polytechnic by the academic staff. Students will also be required to undertake social work education and training in fieldwork placements. These placements involve about 50% of the students' attendance time on the course. Two of the placements are concurrent with the academic teaching and three are block placements. Fieldwork teaching is given by professionally qualified social workers, who work in close conjunction with the social work staff of the Polytechnic. The placements are essential components of both first and second years of the course.

1st Year.

Course duration: September to July (6 weeks theoretical study; 29 weeks theory/practical work and 5 weeks placements)

2nd Year.

Course duration: September to July (13 weeks theoretical study; 13 weeks theory/practical work and 16 weeks placements)

Assessment: the final assessment is based on (a) the student's work throughout the course, (b) supervisors' reports on practical work training, and (c) formal written work for social work method and practice, sociology, human growth and behaviour, and social policy and administration.

Unqualified Social Workers: In-Service Course (Phase III) (A2) (DES4576)

Course Adviser: Mr B. L. Gray

A one-year full-time course which forms the concluding phase of the three-phase study scheme put forward by the Central Council for Education and Training in Social Work to meet the need for training of older long-serving officers for whom full-time training has for various reasons been unobtainable in the past.

Phases I and II are day-release course of two and three terms duration respectively. Local courses are offered at Preston Polytechnic, the Mabel Fletcher College, Liverpool, and the Stockport College of Technology.

Phase III leads to the Certificate of Qualification in Social Work awarded by the Central Council for Education and Training in Social Work. The course involves theoretical study and fieldwork practice, and though aimed mainly at workers in local authority social services departments it is also suitable for students from other social work agencies.

Selection will normally be completed by May of the year of entry and will be based on interviews and an essay.

Qualifications for entry: applicants must be 35 years or over at the date of entry to Phase II and have served as Social Workers for a minimum of 5 years.

Curriculum: subjects studied include human growth and behaviour, social policy and administration, sociological influences on human behaviour, law, social aspects of health and disease, theory and practice of social work. Students will undertake a period of concurrent theoretical and practical training and a block placement. Practical training will include placement in a residential setting.

Course duration: September to August (13 weeks theoretical study; 18 weeks theory/practical work, 8 weeks placements)

Assessment: final assessment will be by periodic evaluation of course work, long essays and a case presentation. An oral examination may be required.

Careers in Social Work

Local Authorities are required by the Social Services Act 1970 to establish Social Service Departments to carry out such functions as child care, welfare services under the National Assistance Act 1948, mental health social work, home help, adult training centres, day nurseries, and social work previously undertaken by some housing departments. Social Service Departments provide a wide reaching single service offering help to deprived children and the aged, the physically and mentally handicapped, the childless family, the one parent family and the single adult. In fact, to all age groups with a great variety of social needs.

The Social Worker is trained to work for and within the community and adopts the following methods in applying his or her skill and training to prevent or alleviate human distress:

(a) casework: centred on individuals and families in difficulties, assisting them to meet and resolve their problems and make use of the services available to them,

(b) group work: aimed to help people with common problems by fostering mutual support and encouragement among them,

(c) community work: based on the assumption that the social worker can act as an initiator within a neighbourhood in order to mobilise available human resources to tackle local problems.

Social Workers are employed by local authorities, in hospitals, with voluntary social work organisations, or in industry or commerce in personnel management. They may be employed as Social Workers in the field or in social work administration, although most will find themselves involved in both aspects of the profession.

Health Visitor's Certificate (A2) (DES3196)

Course Adviser: Miss M. M. Poyser

A one-year full-time course of combined theoretical and practical training leading to the award of a Certificate in Health Visiting by the Council for Training of Health Visitors.

Qualifications for entry: candidates must be State Registered Nurses with approved midwifery experience and possess in addition (a) five G.C.E. subjects at 'O' level, or (b) other approved educational qualifications, or (c) satisfy the Council as to their educational fitness for the course by means of an Entrance Test.

Course of study: there are five main areas of theoretical study: the development of the individual, the individual in the group, the development of social policy, social aspects of health and disease, and principles and practice of health visiting. Students also undertake visits of observation, and twelve weeks of supervised field-work.

Course duration: September to July (35 weeks)

Examinations: internal, externally assessed, and a written project. Periodic assessment is maintained throughout the course.

Qualification: the Health Visitor's Certificate

Careers in Health Visiting

The Health Visitor is a nurse with a post-registration qualification, the Health Visitor's Certificate. She is an essential member of the community health team, providing a continuing health advisory service to families and individuals. Her work has five main aspects:

(a) the prevention of mental, physical and emotional ill-health or the alleviation of its consequences,

(b) the early detection of ill-health and the surveillance of high risk groups,

(c) the recognition and identification of need and mobilisation of appropriate resources where necessary,

(d) health teaching; individual teaching is undertaken by all Health Visitors and, if she has a special aptitude, she may undertake group teaching.

(e) the provision of care, including support during periods of stress and advice and guidance in cases of illness as well as in the care and management of children.

The Health Visitor not only identifies social need as a result of the visit following the statutory notification of birth, but more and more she is concerned with problems she uncovers in the course of her subsequent contact with the family or as she becomes known in the locality. The association of the Health Visitor with the family doctor provides further opportunity of establishing contact with families or individuals living alone who present a potential risk of physical, mental or social breakdown.

Physical Recreation Section

Senior Lecturer-in-Charge: A. J. Smith, BSc, MSc, PhD, DIC

Lecturers

J. Gridley
Mrs D. Lane, DipPE, DipAdvStudy of Ed
J. Montgomery, DipPE, Dip Special Ed

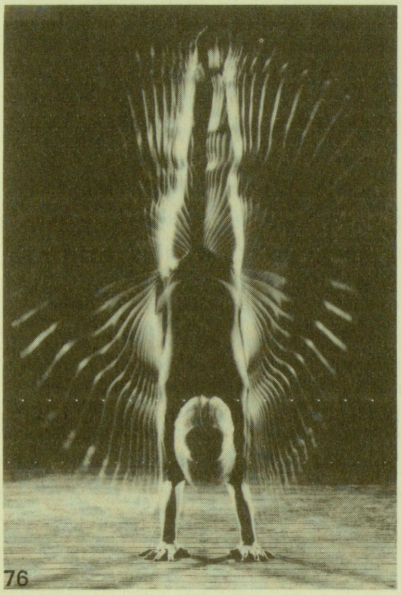
Indoor facilities

The Recreation Hall is equipped with fixed apparatus which, together with portable apparatus and equipment the Polytechnic possesses, allows the pursuit of the following activities: athletics, badminton, basket ball, canoeing and sailing, cricket, dance, fencing, five-a-side football, golf, judo, mountaineering, netball, olympic gymnastics, padder tennis, soccer and rugby training, table tennis, trampolining, volley ball, weight training and lifting. Swimming classes are held at Saul Street baths.

The recreational facilities of the Polytechnic are available to all students enrolled into an academic course without payment of a further fee. Persons interested in any of the activities detailed should contact the Senior Lecturer in Physical Recreation at enrolment or as soon as possible afterwards. Polytechnic sports clubs, affiliated to the Students' Union, are given priority in the evenings.

Lectures and films on a variety of activities, and inter-departmental and inter-Polytechnic tournaments and competitions, are arranged throughout the session.

Stroboscopic film of a gymnastic skill



The section is interested in the development of studies in human movement. In conjunction with the photographic section of the School of Art and Design specialised photographic techniques have been employed in the study of movement.

Lecturers in the Section are co-operating with staff of the Mechanical Engineering Department of the Polytechnic in a number of tests of human performance.

Outdoor pursuits

The mountaineering club arranges visits to the Lake District and North Wales for rock climbing, rambling and canoeing. For full-time students one-week courses in mountain activities are arranged, which include fell walking, canoeing, sailing, rock climbing, orienteering and pony trekking. From time to time arrangements are made for parties to engage in outdoor expeditions during vacation periods. Students are warned against undertaking such activities without proper equipment and leadership.

Regional and National Sports Activities

The Polytechnic is a centre for regional and national sports tournaments in badminton, table tennis, trampolining, judo and basketball. Coaching in Olympic Gymnastics is available and specialised classes are held to prepare young gymnasts for National and International Competitions.

Scheduled Classes

The activities detailed above are primarily intended for students enrolled into one of the Polytechnic's ten academic departments. Persons not registered as students for academic courses may be admitted to certain scheduled classes in physical education, so far as places are available. A tuition fee is payable.

In order to give academic course students priority, persons who wish to enrol for physical education classes alone are not accepted until the fourth week in the session. No person may be admitted to these classes who is less than 16 years of age on the 1st September.

Students receive instruction before embarking in slalom canoes.



Part-time Courses

The Polytechnic offers block release, part-time day and evening-only courses in a variety of subjects. Details will be found in the part-time prospectus, copies of which may be obtained by writing to the Educational Liaison Officer.

Accountancy: Public Finance and Accountancy; Chartered; Certified; Cost and Management
Analytical Chemistry
Applied Chemistry
Applied Physics
Arts and Crafts: Adult Non-Vocational Classes
Banking
Building: Professional
Business Studies
Chemistry
Civil Engineering Law and Arbitration
Company Secretarial Practice
Computing
Construction
Data Processing
Design Appreciation for Graduate Engineers
Electrical and Electronic Engineering: Professional
Electrical and Electronic Engineering :Technician
Engineering: Professional (Mechanical, Production, Engineering Design)
Engineering: Technician
Glass Blowing
Industrial Management
Insurance
Journalism
Languages
Languages for Industry
Legal Practice
Management Studies
Marketing
Mathematics
Medical Laboratory Subjects
Municipal Administration
Nursing
Physics
Planning
Quantity Surveying
Radio and Television
Rating and Valuation
Sciences
Social Studies
Social Work
Statistics
Supervisory Studies
Surveying

Teaching: Supplementary Certificate
Teaching: Mentally Handicapped Children
Teaching: Modern Foreign Languages to Adults
Telecommunications
Transport Administration
Work Study
Workshop Organisation

Polytechnic Calendar

1975

ENROLMENT PERIOD

Monday, 15th September Tuesday, 16th September	Afternoons and evenings only

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Autumn Term (13 weeks)

Monday, 22nd September	Autumn term commences
Friday, 19th December	All Departments close for Christmas after evening classes

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1976

Spring Term (12 weeks)

Monday, 5th January	Spring term commences
Friday, 26th March	All Departments close for Easter after evening classes

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Summer Term (10 weeks)

Tuesday, 7th April	Summer term commences
Friday, 28th May	All Departments close for the Spring Holiday after evening classes
Monday, 7th June	All Departments re-open
Friday, 2nd July	All classes close: end of session

Note This calendar is provisional, and subject to decision by the Academic Board.

Regulations

Discipline

Students are accepted into Polytechnic courses on the understanding that they abide by the regulations herein and from time to time in force.

The Director has the authority to suspend students from attendance for any cause which he considers adequate. The Council will exclude from the Polytechnic premises any student whose continued attendance is undesirable. Suspended or excluded students automatically lose membership of the Students' Union and Polytechnic societies.

Students are required to attend classes punctually and regularly, to carry out satisfactorily such work as is set by their tutors, and to sit the prescribed examinations. There are minimum requirements in all courses in respect of attendance, coursework, laboratory work and project work (where appropriate), and examinations, and the right to continue a course of study depends on the maintenance of satisfactory attendance and academic performance. The requirements in Higher National Diploma courses are detailed in full on page 85; those in other courses may be obtained from Heads of Departments.

In some courses there is a requirement to undertake one or more periods of practical training in industry, commerce or the professions, and progress in the course will depend upon the receipt of a satisfactory report on the standard of work achieved by the student whilst in a practical placement.

Students must conduct themselves in a quiet and orderly manner. They will be held responsible for and required to make good any damage they may cause due to negligence or wilfulness. They are expected at all times to keep the Polytechnic tidy and free from litter and to preserve the furnishings and decorations.

To reduce fire risk and avoid general discomfort students must obey the notices prohibiting smoking in specified areas of the Polytechnic. Heads of Departments have authority to restrict smoking within any other part of the accommodation over which they have control.

Hot cooked foods must not be brought into the Polytechnic, and food must not be consumed on the premises other than in the dining room and coffee lounge. Students who wish to bring packed meals may do so but they should eat such meals in the coffee lounge.

All forms of gambling and card playing for money on the premises or within the precincts are prohibited. Musical instruments, including transistor radios, must not be played on the Polytechnic premises except by arrangement with the Director.

Absence because of illness, etc.

In the case of absence through illness, or other unavoidable cause, the student should inform his or her Head of Department immediately in writing. Failure to do this may result in it being assumed that the student has left the course, and the name of any student who is absent for a continuous period of four weeks without approval will be

removed from the register. When an infectious illness occurs in a house or lodgings in which the student resides immediate notification should be sent also to the Student Counsellor. Such students must not attend the Polytechnic until a medical certificate is supplied stating that there is no risk of the infection being conveyed to others or until authorised to resume attendance by the Student Counsellor.

Changes of addresses and other student particulars

Changes in student particulars occurring during the session must be notified immediately to the Academic Registrar on the form available from the Polytechnic office, for example: change of home or lodgings address, change of employer, change of name on marriage.

Safety in Laboratories and Workshops

Students are required in the interests of cleanliness, health and safety to provide themselves with the recommended kind of protective clothing and footwear which must be worn in workshop and laboratory classes, and to use all protective devices provided. Workshop and laboratory clothes must not be worn whilst attending lectures or whilst in the communal block.

Safety considerations are not of course confined to Laboratories and Workshops and students must exercise constant care within the diverse situations in which they will find themselves. Proper care and diligence is essential, as is attention to any advice or instructions which may be given from time to time. Students involved in any accident, however slight, must complete an accident report form (obtainable in Departments) and return it to the Academic Registrar immediately.

Personal property

The Council cannot accept responsibility for the safety of students' property. Property found on the premises will be handed to the Custodian of Premises, and students wishing to reclaim lost property should address enquiries to the Custodian. The victims of theft should immediately report the circumstances personally to the police and to the Custodian of Premises or the Polytechnic office. The Polytechnic co-operates with the police in their enquiries.

Cloak lockers are available in all departments for students' use. Full-time, sandwich and block release course students may be allocated lockers for the duration of the course. Lockers should be secured by the students' own padlocks.

Lockers must be left empty and unlocked at the end of a course or session as otherwise the locks and contents will be removed.

Parking facilities

Education Authorities have no obligation to provide parking facilities and the Polytechnic does not possess adequate facilities to meet all demands. Parking is restricted to the official car parks and cycle sheds where vehicles may be left at the owners' risk.

Students must drive very slowly in the Polytechnic precincts. They must not drive around or within the Polytechnic premises in break periods. Roadway and delivery areas must be kept clear in case of emergencies. Please park compactly and with consideration for others.

Course Requirements and Admission to Courses

Courses will be provided subject to adequate enrolment and subject to the limits of available teaching accommodation and staff. They may be discontinued at the discretion of the Director at any time during the session should the number of students attending fall below a reasonable level.

The acceptance of a student into a course must have the approval of the appropriate Head of Department, and a student who wishes to enrol into a course demanding entry qualifications must produce documentary evidence that he possesses the necessary qualifications either at or before enrolment. If a potential student or his parents are doubtful about the best course of study to pursue for a particular career they should write in the first instance to the Educational Liaison Officer for advice.

Each full-time or sandwich course student will be placed under the supervision of a Course Tutor who will supervise the student's progress throughout the session and to whom the student may refer for advice about his or her course of study.

Application procedure

Application to join most full-time and sandwich courses should be made as soon as possible before the commencement of session on the standard application form obtainable from and returnable to the Educational Liaison Officer. It is not neccessary to delay application until the results of qualifying examinations are known. (Applications to join the courses leading to Diplomas in Art and Design or the Teacher's Certificate of the University of Lancaster must be made on special forms. Details will be found in the relevant course descriptions.)

In addition to satisfying the academic requirements for admission applicants for most courses are required to satisfy the Head of Department, by personal interview, that their character and aptitudes are such that they are likely to succeed in their course. They will be notified by letter whether their applications have been successful or not. Provisional places will be offered to those applicants awaiting examinations results.

Students accepted must undertake the formal enrolment procedure either on one of the advertised enrolment days or during the first week of the course at times arranged by Heads of Departments.

Overseas students

An overseas student wishing to be considered for entry to a full-time or sandwich course should obtain an application form from the Educational Liaison Officer and forward it, when completed, to the student unit of the office of the High Commissioner (in the case of Commonwealth students) or Embassy (other students) maintained by his government in London, for endorsement and onward transmission to the Preston Polytechnic. The Polytechnic does not make arrangements for the direct admission of overseas students. This applies both to applicants currently living abroad or in this country.

An applicant seeking entry to this country for the purpose of attending a course is required by the Immigration Rules to (a) provide evidence that he has the means of meeting the full costs of the course, and of his own maintenance and that of any dependents, during the whole of the course, and (b) agree that he will leave this country when his course is completed. Additionally, he must provide evidence to the Polytechnic that he has sufficient competence in written and spoken English to be able to follow a course of study conducted in English.

If accepted by the Polytechnic the applicant will be required to send a deposit of £50 towards the first year's fees, after which he will be sent a letter of acceptance which may be used for immigration and exchange control purposes.

Higher National Diploma Course requirements

A Higher National Diploma is awarded following a three-year sandwich course or two-year full-time course of advanced study.

Awards are made by a Joint Committee of the Department of Education and Science and one or more Professional Institutions. To receive an award a candidate must have complied with the rules of the appropriate Joint Committee which normally require that the candidate must:

(a) make not less than 80% of the possible attendances in each subject in each year of the course,

(b) obtain not less than 40% of the possible marks in each subject in the examinations held at the end of each year,

(c) obtain not less than 40% of the possible marks obtainable in each year for set work, class work, laboratory work, etc., taken separately in each subject for which such marks are to be awarded, and

(d) obtain not less than 50% of the grand total of marks obtainable in the final year. Of this total the possible marks in the examinations constitute 70% and the remaining 30% will be the possible marks for set work, class work, laboratory work, etc.

A 'Distinction' may be awarded to any candidate qualified to receive a diploma who, in the opinion of the examiners, has shown special merit in the final examination. His diploma will be specially noted with the name(s) of the subject(s) in which he has thus distinguished himself.

Tuition Fees

Tuition fees are payable at the beginning of each course and of each succeeding year of the course. Payment in full is due at or before enrolment; it is regretted that fees cannot be accepted in instalments. Cheques should be made payable to Lancashire County Council and crossed. A refund of fee may be made in exceptional circumstances beyond the student's control and unforeseen at the time of enrolment. Applications for refund should be made in writing to the Academic Registrar, accompanied by the student's receipted copy of his enrolment form.

The only students excused paying tuition fees at the time of enrolment are:

(a) full-time and sandwich course students who are to be grant-aided by a Local Education Authority; documentary evidence will be required of the offer of a grant, and

(b) those whose employers undertake to pay the tuition fees on their behalf; they must produce at enrolment a letter from the employer to that effect.

The student himself is responsible for payment of the fee if for any reason the Local Education Authority or his employer refuse to accept responsibility.

Fees are graded into categories corresponding to the academic level of the course, and the grade of each course is shown in brackets after the course title or after the year of the course. Course grades are:

Grade B: work of an intermediate character, for example the Foundation Course in Art and Design.

Grades A1, A2 and A2NP: work of an advanced character, above the level of Grade B and leading for example to Higher National Diplomas, final professional qualifications, degrees.

Note to Local Authorities. The course grade designation A2 NP indicates an advanced course which is not poolable under D.E.S. regulations. In respect of these courses the normal recoupment procedure will apply.

United Kingdom Students: Tuition Fees 1974-75

	Students under age 18 on 1st September £	Students age 18 and over on 1st September £
Courses graded A1, A2 and A2 NP		
of 30 weeks or more	1.50	104.00
of less than 30 weeks	1.50	74.00
Exceptions to the above:		
Foundation Course in Art and Design	1.50	66.00
C.E.I. Part 2 (the April to July period detailed in course descriptions)	–	30.00
Graduateship of the Institute of Physics, 2nd Year	–	44.00
Teacher's Certificate of the University of Lancaster	no fee	

Overseas Students: Tuition Fees 1974-75

	30 weeks or more £	Less than 30 weeks £
Courses graded A1, A2 and A2 NP	264.00	181.00
Course graded B	164.00	114.00

Exceptionally, an overseas student who (a) can provide evidence that he or she has been ordinarily resident in this country for three years prior to the commencement of the course, or (b) is under age 19 prior to the commencement of the session, will not be expected to pay the special overseas students fees. They will pay the fees normally payable by United Kingdom students.

Residential General Studies Courses

As an integral part of their studies, students in certain advanced full-time and sandwich courses will normally attend each year a $2\frac{1}{2}$ day residential course. The fee is approximately £7.00 which must be paid by the student upon arrival at the course venue. Students in receipt of Local Authority grants will in most cases be reimbursed part of the cost by their supporting authorities. The balance (to a maximum of £5.00) is recoverable from the Polytechnic on production of the necessary evidence.

Permission Vouchers

Students wishing to enter courses graded B and A2 NP must produce permission vouchers each year and present them at enrolment. The only students exempted from this requirement are those normally resident in the New Lancashire Area or those who can produce evidence of support from a grant-aiding authority.

Application for a voucher must be made by the student to the Education Office of the Local Education Authority in whose area he resides. Failure to produce the necessary voucher may result in a fairly heavy charge being made against the student concerned to cover the course costs normally payable by his Local Education Authority.

Examinations

Entry to Examinations

All students are required to take prescribed internal or external examinations in each year of the course.

Examination fees must be paid by students at the time of entry to examinations. Accounts cannot be sent to grant-aiding authorities or employers but receipts are issued to students who may use them, if appropriate, when recovering their expenditure from their sponsoring bodies. There are no fees for purely internal examinations of the Polytechnic.

Students who take the examinations of external examining bodies (e.g. University of London, Council of Engineering Institutions) must pay the examination fees of these bodies as well as the local centre fee as appropriate. These are stated on the forms of entry or may be obtained on enquiry at the Polytechnic office.

Each student is responsible for his own entry to examinations. Students will not be informed individually of the last dates of entry or of timetables of examinations, but these will be published on notice boards.

Examination Results

Sessional Reports will include examination results, but they cannot be completed until after the results are received from external examining bodies. Reports are then sent to each student as soon as possible. It is regretted that in the meantime enquiries cannot be answered. Copies of external examination pass lists will be made available for scrutiny on the Polytechnic notice board as soon as possible after they are received.

Re-examinations

In the event of a Joint Committee or other examining body agreeing to the re-examination of a student in a subject, the student will be required to pay the full cost of the re-examination, or to share the cost proportionately should more than one student be involved in the same re-examination.

General Information

Communal Facilities

The Communal Block provides facilities for the educational, social and recreational enjoyment of the students and staff. Besides administrative accommodation and a fully equipped theatre for both lectures and drama, there is a dining room and coffee foyer, a students' common room and the Students' Union offices. The Library is situated in this building.

The Recreation Hall will be reserved at certain times for examinations, and occasionally for ceremonies or exhibitions, but at other times it is available to student groups, societies and individuals for games and a very wide variety of physical activities. The bridge over the north courtyard leading to the hall contains changing rooms and showers.

Refectory

The dining room is open from 11.45 a.m. to 1.30 p.m. for lunch. A selection of courses at various prices is available. Tea or coffee after lunch may be taken in the adjacent coffee foyer.

Light teas or cooked meals are normally available from 4.30 to 6.30 p.m. In addition to meals, tea or coffee or soft drinks will be available in the coffee foyer during set periods to cover mid-morning and mid-afternoon breaks between classes. Light refreshments are available also in H Block, Robin House and the Avenham Annexe, and elsewhere by service from trolleys, at the same times.

In the interests of hygiene students are requested to observe any restrictions on smoking in the dining room.

Requests for any special catering should be made in the first instance to the Deputy Chief Administrative Officer well in advance of the occasion.

Stationery Shop

The College stationery shop is open on three occasions during the day, namely 8.50 to 9.15 a.m., 1.00 to 2.00 p.m., and 6.45 to 7.15 p.m. Students may purchase the usual items of stationery, and also special laboratory and note books necessary for many courses.

Outside accommodation

Shortage of accommodation makes it necessary for some classes to be held outside the main Polytechnic premises. These classes are indicated by room number prefixes

as follows in the several Polytechnic documents dealing with teaching accommodation:

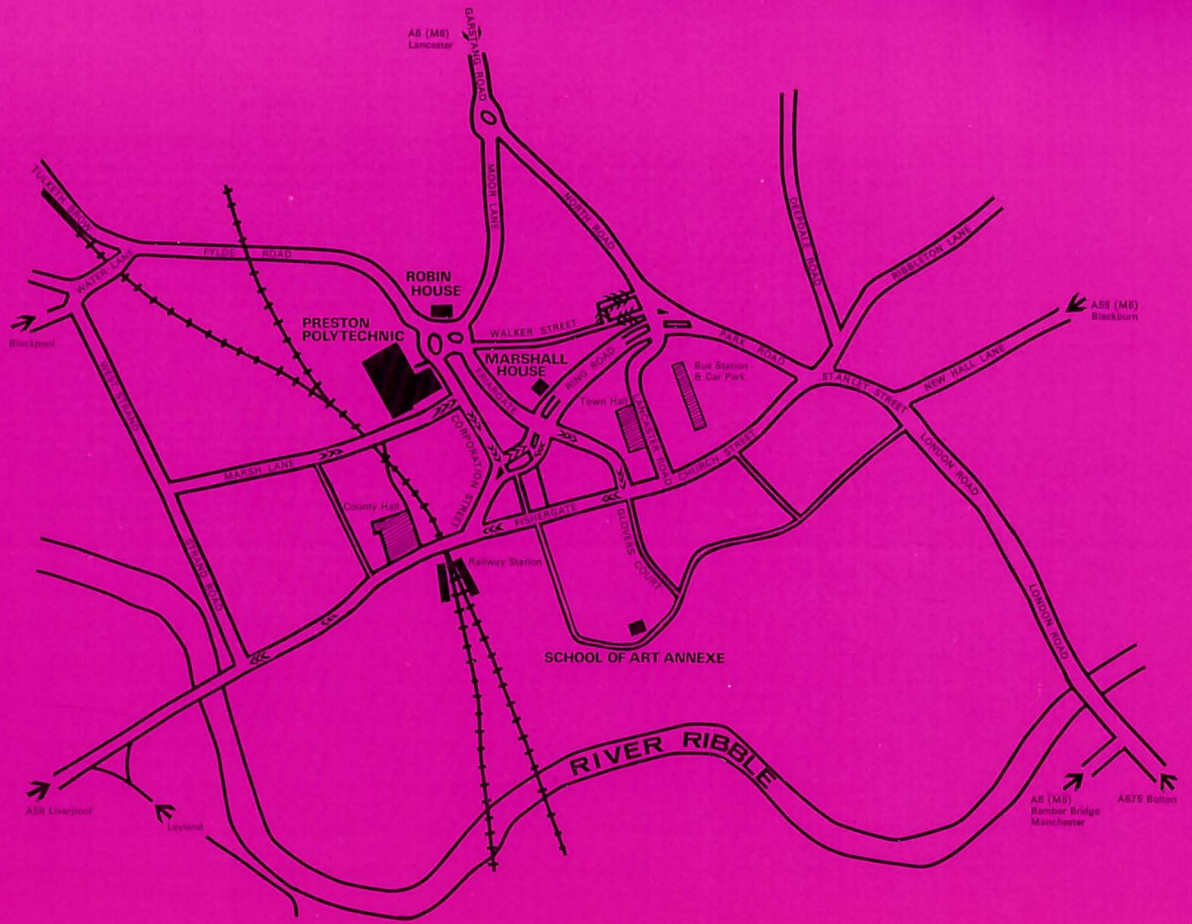
Av	School of Art and Design Annexe, Avenham Lane, Preston
BTU	Blood Transfusion Unit, Lancaster
MH	Marshall House, Ringway, Preston
PRI	Preston Royal Infirmary, Deepdale Road, Preston
RH	Robin House, Fylde Street, Preston

Societies and Professional Bodies

Lecture meetings of societies and professional bodies are frequently held in the Polytechnic.

Notice of the lectures will be displayed in the main entrance foyer during the session. Individual students and members of staff are welcome to attend. Application for groups to attend should be made through the Director to the local secretary of the organisation.

Printed by Mather Bros (Printers) Ltd Preston & London


A6 (M6)
Lancaster
GARSTANG ROAD
MOOR LANE
NORTH ROAD
PRESTON ROAD
RIBBLETON LANE
A59 (M6)
Blackburn
ROBIN HOUSE
PRESTON POLYTECHNIC
WALKER STREET
MARSHALL HOUSE
RING ROAD
Bus Station & Car Park
PARK ROAD
STANLEY STREET
NEW HALL LANE
Blackpool
FYLDE ROAD
MARSH LANE
Town Hall
CHURCH STREET
LONDON ROAD
CORPORATION
LUNE ST
FISHERGATE
County Hall
PENWORTHAM
Railway Station
FLEMING COURT
SCHOOL OF ART ANNEXE
RIVER RIBBLE
A59 Liverpool
Leyland
A6 (M6)
Bamber Bridge
Manchester
A675 Bolton

Preston Polytechnic

Part-time Courses

1975/76

Preston Polytechnic

Corporation Street, Preston PR1 2TQ (0772-51831)

Director: H. D. Law, B.A., Ph.D., F.R.I.C.

Deputy Director: S. Skidmore, B.Sc., Ph.D., F.R.I.C.

Chief Administrative Officer: T. G. Goodwin, M.A., Dip.Ed.

Deputy Chief Administrative Officer: J. Barnacle, D.M.A., A.C.I.S.

Although every care has been taken to ensure that the information contained in this Prospectus is accurate at the time of printing it must be understood that changed circumstances may necessitate cancellation of courses or alterations in the programme of courses, course content, fees and other matters dealt with. The Polytechnic cannot undertake to give notice of such cancellations or alterations, and cannot accept any liability arising out of or in connection with them.

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Preston Polytechnic

The period since the Polytechnic was designated on 1st September, 1973, has proved extremely eventful. Administratively, the Harris College, which formed the basis of the Polytechnic, was administered by the Preston Local Education Authority. With the re-organisation of Local Government on April 1st, 1974, the Polytechnic became the administrative responsibility of the New Lancashire County Council. This is the only Polytechnic in New Lancashire and in its submission to the Secretary of State concerning the provision of higher education in Lancashire, the Authority accepted that the Preston Polytechnic will be the main centre for higher education developments in the public sector in the County. The Secretary of State has agreed to the Local Authority's proposal that the Colleges of Education at Poulton-le-Fylde and at Chorley should amalgamate with the Polytechnic. This amalgamation will take effect from the beginning of the 1975/76 Academic Session. Craft and pre-University entrance courses were transferred from the Polytechnic to the W. R. Tuson College of Further Education in 1974 so that the Polytechnic is beginning to emerge as an institution specialising in higher education across a wide spectrum of subjects and courses, including teacher training courses.

At designation, the Polytechnic had approval from the Department of Education and Science for a substantial Capital Building Programme. Unfortunately, the moratorium on public building introduced at the end of 1973 delayed the implementation of this Programme. However, a reduced Programme is to go ahead and the construction of a Students' Union, Student Residential Facilities and further Catering Facilities on the Adelphi Site should begin shortly. The area already appropriated on behalf of the Polytechnic for building purposes constitutes a highly desirable urban campus which should make Preston the envy of many Polytechnics experiencing siting difficulties in other cities. It has been possible to alleviate to some extent the cutback in the Building Programme by the leasing of suitable premises. For example, accommodation leased in the new office block Marshall House, which is situated on the Ringway some five minutes' walk from the main campus, is providing an ideal home for courses in the area of Business and Administration.

One of the first requirements of the new Polytechnic was to establish its academic credentials with the Council for National Academic Awards, which is the chartered body responsible for approving degree courses in Polytechnics and Colleges. Despite the long and successful history of the Harris College in the development and operation of professional, diploma, certificate and other courses, its involvement with the Council for National Academic Awards had not been substantial. It is therefore pleasing to report that approval was gained during the 1973/74 session for degree courses leading to BA Honours Fashion, BA Honours Fine Art, BA Honours Psychology, BSc Electrical Engineering, BSc Mechanical Engineering and a part-time BSc Physics. Taking into account the already approved CNAA degree courses leading to BA Honours Graphic Design and part-time BSc Chemistry, together with the External London degree course in Combined Sciences, the degree involvement of the Polytechnic is therefore beginning to look significant. Culminating the 1973-4 session, the Council for National Academic Awards made a Quinquennial Visit to the Polytechnic, as a result of which the Polytechnic was approved as a centre for the award of the Council's degrees for a five-year period.

The Polytechnic has thought a great deal about its philosophy and unlike some Polytechnics, it does not see itself as aspiring to become a further University. On the contrary, it envisages that the Polytechnic will continue to play an important role in the public sector, taking account of the needs of industry, commerce and the professions, and, in general, being responsive to social needs. Part-time courses will continue in the Polytechnic as will courses leading to professional, diploma and certificate qualifications. The Lancastrian School of Management, set up under the leadership of Mr. Langham, Head of Management Studies in the Polytechnic, provides an example of one form of beneficial interaction between the Polytechnic and other FE Colleges. This School with its Advisory Committee under the Chairmanship of The Right Honourable The Earl of Derby, is responsible for the co-ordination and development of all Management Education throughout the Further Education Colleges of Lancashire.

Governance of the Polytechnic

The legal responsibilities of the several agencies involved in the establishment, governance and operation of the Polytechnic are detailed in the *Instrument of Government* and the *Articles of Government* approved by the Secretary of State for Education and Science. Copies of these documents are deposited in the Polytechnic Library and may be seen on request.

The provision of the Polytechnic is the responsibility of the Lancashire Education Authority.

The governing body of the Polytechnic is the *Polytechnic Council* which has responsibility for 'the general direction of the Polytechnic'. It has a membership of 34, including members appointed by Local Education Authorities; the University of Lancaster, the Manchester and Liverpool Polytechnics and teachers' unions; co-opted members from industry, commerce and the professions; and Polytechnic staff and students.

Subject to the overall responsibilities of the Polytechnic Council the *Director* is responsible for 'the internal organisation, management and discipline of the Polytechnic', and the *Academic Board,* under the Chairmanship of the *Director,* for 'the planning, co-ordination, development and oversight of the academic work of the Polytechnic'. The Board is composed of senior academic and administrative officers, members appointed by and from the full-time teaching staff, members appointed by the Students' Union, and co-opted members.

The Library

Librarian: J. R. Edgar, MA, FLA

It is the aim of the library to provide a first-class stock and service to meet the needs of all its users, in learning, teaching and research, and to make some provision for general interests.

It has a rapidly growing collection of books and periodicals, reports, pamphlets, standards, abstracts, indexes, and microforms, and the stock is supplemented by interloan facilities with other libraries. It is planned to develop the library as a learning resources centre, to provide audio-visual materials and facilities for their use.

The main library occupies a central position in the Polytechnic and provides 250 seats for readers. There is also a sectional library in Marshall House with seats for 75 readers. A new library is being planned and work on its design is in progress.

In addition to the provision of study, reference and reading facilities, the library lends books, and also provides a photocopying service at a small charge.

The library also acts as an information and reference centre for its users and for local industry and commerce, and students are encouraged to use the library regularly and to consult the library staff both for guidance in their reading and for help in finding further information.

The library opening hours are Monday to Thursday, 0900-2100 hours, Friday, 0900-2000 hours, during terms; and Monday to Thursday, 0900-1730 hours, Friday, 0900-1600 hours during the vacations.

A 'Guide to the Library' which describes the library services is available to all students.

Computing Services Unit

Head of Computer Services: D. W. Walsh, BSc, MSc, MBCS

The Polytechnic's main computer unit, an ICL 1901A system, together with equipment for the preparation and transmission of data in a form which can be read by the computer, are housed in a specially designed suite of rooms. On-line computing facilities are expected to be available in the near future. In addition, Departments in science and technology possess smaller special purpose computers for use in the advanced teaching and research projects carried on within the Departments. The Polytechnic collaborates with local schools and colleges in introducing modern computing methods and terminal links have been installed for this purpose.

Computer appreciation and programming is taught in all advanced courses which require these modern techniques. Short courses in various computer languages, and more extensive courses in data processing and systems analysis, are arranged throughout the session. Increasing demands are being made on the computer for research and consultancy work undertaken by the staff of the Polytechnic. The computer will eventually be used as the focal point of specialist degree and diploma courses in computer studies. The Head of the Computer Services will be pleased to give advice to representatives of industrial and commercial undertakings who may be considering the use of a computer for their own needs.

Student Services

Student Welfare

Student Counsellor: Miss Frances Higgins, MA

The difficulties which a student can experience are those facing society generally and those which are particular to a student body, such as worries which may arise from financial or domestic problems and study.

The Student Counsellor is available to see students in her room (B44) about any need or difficulty they are experiencing, or for information they may require on any practical matter of concern to them. It is emphasised that her assistance is confidential.

Student Health

Polytechnic Doctor: Dr N. F. Leigh, BA, MB, BChir, MRCGP

Students who will be living locally in lodgings are advised to bring their National Health Medical Cards with them and register with the Polytechnic Doctor. It is recommended that the landlady be told the name of the doctor so that she may call him on the student's behalf if necessary.

The Polytechnic Doctor is available in the Polytechnic on Mondays, Wednesdays and Fridays in term-time from 12 noon to 1.00 pm.

Students should not attend the Polytechnic from a house in which there is infectious illness. Cases should be reported promptly to the Student Counsellor.

Student Lodgings

Polytechnic Lodgings Officers: Mrs P. M. Cross and Mrs P. Ryan

The Polytechnic Lodgings Officers will do all they can to help students to find accommodation and they prepare each year a register of house-holders and hotel keepers who are willing to offer lodging accommodation. They initially approve and thereafter inspect all registered accommodation.

Accommodation is available in Preston and surrounding districts, but some students may have to be accommodated some distance from the Polytechnic. Priority will be given to students whose homes are beyond the range of daily travelling to the Polytechnic. Students who are grant-aided will generally be assisted by their supporting Local Education Authorities if their necessary travelling expenses exceed the amount included in the grant. Intending students should write to the Polytechnic Lodgings Officers as soon as they receive confirmation of their acceptance into a course. Leaflets giving guidance to students who are living away from home are available.

Services offered to Schools and Industry

Educational Liaison Officer: G. A. Redhead, BSc

Advisory Service for Schools and FE Colleges

Pupils frequently need information and advice about courses available at Preston and Polytechnics generally, and the Educational Liaison Officer is willing to assist the careers staff in this respect. Another of his functions is to establish and maintain personal contacts between the staff of school and their colleagues in the Preston Polytechnic.

Visits of small or large groups of Fifth and Sixth Form pupils to the Polytechnic are welcomed. Alternatively, staff of the Polytechnic will gladly visit schools to talk about courses and life in the Polytechnics, to lecture on their own specialist subjects or to assist at careers events. Careers staff are invited to contact the Educational Liason Officer to discuss suitable arrangements.

Service to Employers and Employees

Employers or employees who require information about Polytechnic courses should contact the Educational Liaison Officer who can provide a link between the management of commercial and industrial establishments and staff of the Polytechnic. Employers are encouraged to make known their views of possible courses whenever they feel the Polytechnic can be of service.

The Educational Liaison Officer will be pleased to arrange visits by employers to the Polytechnic to meet staff and see the available facilities. These include equipment used in advanced teaching and research which may be made available to industry in certain circumstances. The Polytechnic will be happy to assist in the solution of technical problems. Additionally, employers may wish to collaborate in student projects or to offer sandwich course placements. The Educational Liaison Officer is available to visit companies at their convenience for discussions.

School of Art and Design

Head of School: T. Metcalfe, ARCA, ASIA

The School of Art and Design

The School is one of the 42 centres in England and Wales approved by the Council for National Academic Awards to offer courses leading to BA (Honours) in Art and Design.

For a number of years the School was chiefly concerned with preparing students for employment as designers in industry, though a concern with Fine Art was maintained through Foundation Courses in Art and Design staffed by practising painters, sculptors and print-makers. However, from September, 1974, the School has offered BA (Honours) courses in Fashion, Fine Art and Graphic Design as well as a Foundation Course for students who are not less than 17 years of age at entry. The courses in Design (Fashion and Graphics) enable students to develop personal creative talents and a good understanding of industrial and commercial processes, the latter being in part dependent upon the close and fruitful relations with industry that members of the design staff have established over a number of years. The course in Fine Art provides opportunity for fundamental studies cutting across the boundaries of the specialist design areas. It provides a basis for the practice of art, for the teaching in schools of general education, and for subsequent specialisation in a wide range of activities to which a broad competence in, and understanding of, the visual arts are appropriate. With the establishment of the three BA courses it has been possible to introduce advanced studies in the history and philosophy of art and design which contribute to students' ability to work successfully in increasingly complex fields, as well as to their general intellectual development.

There are good facilities within the School for small-scale production using industrial techniques in a number of fields (e.g. photography, letterpress and lithographic printing, garment production and industrial design) and these, together with facilities for the practice of fine art in two and three dimensions, are constantly being extended as new needs and new technical processes emerge.

The School also offers a wide range of adult non-vocational courses in art and crafts.

Open Studio Classes in Art and Crafts

Course Adviser: Mr D. F. Bates, ARCA

In these days of increasing mechanisation and technological development, a growing number of people are feeling the need for a personal creative pursuit. It is with this in mind that studios are open at certain times in the Avenham annexe of the Polytechnic for those who wish to participate in the practice and theory of the visual arts and crafts. These facilities are intended for those seeking creative leisure and for the more experienced artist or craftsman who wishes to work in congenial surroundings. Advice and tuition will be given to those who require it by practising artists and craftsmen.

The fee covers up to four evenings or two whole days (four sessions) per week. There is no charge for registered students of the Polytechnic or for senior citizens.

Painting and Drawing (V) (DES8000)

Classes for beginners and the more experienced. 'Open studio' for practising artists. Models available for portrait and life. Lectures and discussions on the techniques of painting and development in art up to the present day. Classes: every day and four evenings per week.

Modelling and Sculpture (V) (DES8003)

Modelling in clay and plaster. Plaster casting. Facilities for metal work; glass fibre processes; wood carving. Classes: one half day and two evenings per week.

Jewellery and Silversmithing (V) (DES8002)

Basic techniques in fine jewellery work, silversmithing and enamelling. More advanced work:—stone setting, forging, brazing and hand raising. Classes: two half days and four evenings per week.

Printmaking (V) (DES8005)

Etching, lithography, relief printing (wood and lino cuts); silk screen printing; incorporation of photographic images. Practising artists and teachers especially invited to widen their range of media. Classes: two evenings per week.

Pottery (V) (DES8001)

Courses in basic techniques for beginners. Facilities and tuition for more experienced potters. Throwing techniques; ceramic sculpture; oxidised and reduced stoneware firings. Classes: one day and four evenings per week.

Embroidery and Weaving (V) (DES8004)

Texture and pattern and colour used as a basis for the design of decorative wall hangings and embroideries. Classes: one half day and two evenings per week.

Other activities

Exhibition facilities and visits to exhibitions in London and elsewhere at reduced rates. Full use of the Polytechnic facilities (library, etc.). Lectures and films on art.

Department of Business and Administration

Head of Department: B. G. Booth, BA (Econ),MTech, FSS

The Department of Business Administration

The Department, (housed in Marshall House on the Ringway), provides full-time, sandwich, block-release and part-time courses in business education. These courses lead to qualifications in business studies and the professions.

The Department aims to offer students an opportunity for intellectual development by providing an inter-disciplinary approach. Seminars and tutorials form an integral part of the teaching to enable students to initiate and develop their creative thinking. The Department has close links with Industry, Commerce and Public Authorities in Lancashire and Cumbria and other regions.

Chartered Institute of Public Finance and Accountancy

Course Adviser: Mr J. V. Pearson

Old Regulations

Intermediate Examination (II) (DES2183)

November, 1975, Examination Course. A three-week block-release course to be held during September and October, 1975, to prepare students, who have already completed a full programme of study for the November, 1975, Intermediate Examination.

Final Part 1 Examination (II) (DES2184)

May, 1976, Examination Course

This course will be held between September, 1975 and May, 1975 and includes the following periods of study, to prepare students for the May, 1976 examinations:

(a) day release on Mondays, 9.00 a.m. to 7.15 p.m.

(b) two three-week periods of block release study.

November, 1976, Examination Course

This course will be held between February, 1976 and June, 1976, on a day release basis, together with six weeks block release. There will also be a further three weeks block release period prior to the November, 1976, examination.

Final Part 2 Examination (II) (DES2184)

The Final Part 2 course will be held between September, 1975 and May, 1976, and includes the following periods of study, to prepare students for the May, 1976 examinations:

(a) day release on Tuesdays, 9.00 a.m. to 8.15 p.m.

(b) two three-week periods of block release study.

New Regulations

Graduate Conversion Course

A one-term full-time course for 'non-relevant' graduates commencing in September, 1976. Students who successfully complete the course may proceed to the professional examinations of the CIPFA.

Professional Examination 1

This course is designed to prepare students for the December, 1976, Professional 1 Examination of the Institute, and will consist of thirteen weeks block release, divided into periods, between January, 1976 and November, 1976.

The Polytechnic also offers a nine-months' full-time Foundation Course under the Institute's new regulations. Further details of this, and other courses, may be obtained from the Course Adviser, or Head of Department.

Note: Syllabuses and regulations for admission to the Institute can be obtained from the Secretary, The Chartered Institute of Public Finance and Accountancy, 1 Buckingham Place, Westminster, London SW1E 6HS.

Institute of Chartered Accountants, Final Part I Linked Course, Professional Examination I (DES4631) **and Professional Examination 2 Linked Courses** (II) (DES4632)

Course Adviser: Mr M. J. English. Professional Examination 1
Mr A. W. H. Ward. Professional Examination 2

These are part of a home study and oral tuition scheme. Students are required to enrol for a home study course and this will be 'linked' with periods of attendance at the Polytechnic. The Polytechnic part of the scheme consists of attendance for one day and evening each month, together with periods of block release.

Syllabuses and regulations for admission to the examinations can be obtained from the Secretary, The Institute of Chartered Accountants in England and Wales, Moorgate Place, London EC2R 6EQ.

Institute of Chartered Accountants: Professional Examination 1 and Professional Examination 2 (II) (DES4631-2)

Course Advisers: Mr M. J. English. Professional Examination 1
Mr A. W. H. Ward. Professional Examination 2

Part-time evening classes are arranged for PE1 and PE2 examinations. Syllabuses and regulations for admission to the examination can be obtained from the Secretary, The Institute of Chartered Accountants in England and Wales, Moorgate Place, London EC2R 6EQ.

Association of Certified Accountants: Foundation Examination Parts A and B (II) (DES4830). **Professional Examination Sections 1, 2 and 3** (II) (DES2161/2), **and Diploma in Accounting and Finance** (II) (DES4557)

Course Adviser: Mr R. J. Hudson

Part-time day and evening classes are arranged for all the above examinations. Special arrangements will be made to cover the requirement of students during the transition from the old examination structure.

Exemptions from subjects of the Foundation and Professional examinations are accorded to those students who have successfully completed the full-time Foundation course or those who have successfully completed National Diploma or Certificate courses at either Ordinary or Higher level.

The Certified Diploma is intended for professional people who are not accountants and yet need a working knowledge of Accounting and Finance in the conduct of their business affairs. The purpose of the Diploma is to provide a recognised ancillary qualification that will establish the holder's competence to apply his knowledge of the broad principles of business finance and accounting to practical situations encountered in the course of his daily work. The recommended study period is one year of part-time day and evening attendance.

Syllabuses and regulations for admission can be obtained from the Secretary, The Association of Certified Accountants, 22 Bedford Square, London WC1B 3HS.

Institute of Cost and Management Accountants: Foundation Examination Parts A and B (DES4831) **and Sections 1, 2 and 3** (II) (DES2178-9)

Course Adviser: Mr M. A. Thompson

Part-time day and evening classes are arranged for all the above examinations.

Exemptions from subjects of the Foundation and Professional examinations are accorded to those students who have successfully completed the full-time Foundation Course or those who have successfully completed National Diploma or Certificate courses at either Ordinary or Higher level.

Syllabuses and regulations for admission can be obtained from the Secretary, Institute of Cost and Management Accountants, 63 Portland Place, London W.1, or from the course adviser.

Institute of Bankers: Banking Diploma Part 2 (III) (DES2173)

Course Adviser: Mr J. Isherwood

Part-time day and evening classes are arranged to cover the Part 2 examinations for the Banking Diploma. These courses enjoy the active support of the local branch of the Institute of Bankers.

Syllabuses and regulations for admission can be obtained from the Secretary, The Institute of Bankers, 10 Lombard Street, London EC3.

Building Societies Institute, Associateship (III) (DES4585)

Part-time day and evening classes are arranged for the Institute's examinations.

Syllabuses and regulations for admission can be obtained from the Secretary, The Building Societies Institute, Farnhams Hall, Ware, Herts SG12 7PZ.

Institute of Chartered Secretaries and Administrators, Part 1 (DES2273) **and Parts 2, 3 and 4** (II) (DES2274)

Course Adviser: Mr E. Schofield

Part-time day and evening classes are arranged for each part of the examination Candidates holding the Ordinary National Diploma and Certificate in Business Studies with passes in appropriate subjects at credit level may be granted exemption on a subject for subject basis from all four subjects of the Part I Examination.

The course can be taken in any one of three spheres—General and Financial, Company Secretarial, and the Public Services—according to the student's interests or type of employment. Details can be obtained at the time of enrolment.

Syllabuses and regulations for admission can be obtained from the Secretary, The Institute of Chartered Secretaries and Administrators, 16 Park Crescent, London, W1N 4AH.

Institute of Legal Executives

Course Adviser: Mr P. J. Gaule

Associate Examinations (IV) (DES2219). This is a two-year course. The course will be held on Tuesdays from 1.45 to 8.00 p.m.

Associateship will be granted to candidates successful in both parts of the examination who have at least three years' approved experience in a legal office. Candidates without the necessary experience may still take the examinations but they will not be eligible for election as an Associate until they have obtained the three years of approved experience.

Candidates must have obtained a General Certificate of Education with a pass at Ordinary level in English language, or a Certificate in English language regarded by the Institute as being its equivalent.

Fellowship Examination (III) (DES2220). Candidates for this examination are required to select three subjects from the official list. The Polytechnic offers classes in contract, tort, criminal law, conveyancing I and II and probate. Other classes in other subjects can be arranged to suit the majority of students after enrolment.

Copies of the syllabuses and regulations for admission to the examinations can be obtained from the Secretary of Education and Training, The Institute of Legal Executives, Ilex House, Barrhill Road, Streatham, London SW2.

Chartered Insurance Institute, Associateship Examinations

Course Adviser: Mr D. Clusky

Classes will be arranged under the regulations of the Institute for the following subjects:

Associateship Examinations (III) (DES4421). Legal and economic aspects of insurance, element of insurance, insurances of the person, property and pecuniary insurances and insurances of liability.

Students wishing to enrol for any of the above classes should communicate, in the first instance, with the Education Secretary of the Preston Insurance Institute, Mr G. Carter, A.C.I.I., Commercial Union Assurance Co. Ltd., 63 Guildhall Street, Preston (Tel. 58191).

Candidates holding the Ordinary National Diploma or Certificate in Business Studies with passes at credit level may be granted a subject for subject exemption from the Institute's examinations.

Syllabuses and regulations for admission can be obtained from the Secretary, The Chartered Insurance Institute, 20 Aldermanbury, London EC2V 7HY.

Rating and Valuation Association, Rating Division

Course Adviser: Mr F. W. Shakespeare

Intermediate Examination (IV) (DES2371)

Classes for Part II will be held on Wednesday afternoon and evening each week.

Final Examination (IIINP) (DES2372)

Classes for Part II will be held on Thursday morning, afternoon and evening each week.

Syllabuses and regulations for admission to the examinations can be obtained from the Examination and Membership Registrar, The Rating and Valuation Association, 115 Ebury Street, Belgravia, London SW1W 9QT.

Certificate in Municipal Administration (new regulations) (IV) (DES4456)

Course Adviser: Mr J. R. Topping

Intending students are advised to consult the current regulations of the Local Government Training Board for the conditions of registration.

Part A: classes will be held on Mondays

Curriculum: government and public administration I, economics of public finance I, introduction to local government administrative practice

Part B: classes will be held on Tuesdays

Curriculum: government and public administration II, economics of public finance II, social policies and social needs

Institute of Marketing: Diploma in Marketing

Course Adviser: Mr S. M. Haddock

This is a three-year course which is arranged mainly in the evenings. The course covers the whole of the Diploma scheme.

1st Year (IV) (DES4005). *Curriculum:* fundamentals of marketing, elements of statistics, business organisation, economics of marketing

2nd Year (IV) (DES4006). *Curriculum:* marketing practice, behavioural aspects of marketing, financial and management accounting, commercial law

3rd Year (III) (DES3942). *Curriculum:* advertising, market research, marketing. Syllabuses and regulations for admission can be obtained from the Director, The Institute of Marketing, Moor Hall, Cookham, Berks (Bourne End 24922).

Higher National Certificate in Business Studies (including a Public Administration option) (III) (DES1076)

Course Adviser: Mr J. R. Topping

A two-year part-time day and evening course designed to provide a basic qualification for a career in industry, commerce or public administration. There is an opportunity to choose subjects appropriate to the student's career, apart from the compulsory subject of applied economics or economics of public finance.
Professional bodies grant examination exemptions to holders of this award.

Qualifications for entry: applicants must be not less than 18 years of age and hold (1) the Ordinary National Diploma or Certificate in Business Studies, or (2) the General Certificate of Education at Advanced level in two subjects directly related to Business Studies, or (3) the General Certificate of Education at Advanced level in two subjects and have completed a conversion course in economics, accounts and law. Applicants over 25 years of age who have completed a conversion course in economics, accounts and law, or who are otherwise suitably qualified in the opinion of the Joint Committee, may also be admitted.
The award of the Certificate will be based upon (1) success in the examinations in each year in three subjects, (2) making not less than 60% of the possible attendances in each year in each subject, (3) submission of a satisfactory extended essay of approximately 5,000 words upon an approved topic in the final year, and (4) the obtaining of not less than 40% of the possible course work marks in each year.

Higher National Certificate in Business Studies

The first year subjects will be offered on Mondays and are as follows: (a) Compulsory subject: applied economics I (b) one subject from: advanced accounting I, commercial law, industrial law, business organisation, marketing (c) one subject from: cost accounting I, office organisation, secretarial and administrative practice, data processing.
The second year subjects will be offered on Mondays and are as follows: (a) compulsory subject: applied economics II (b) one subject from: advanced accounting II, *industrial law, *commercial law, *business organisation, *marketing, market research (c) one subject from: cost accounting II, *office organisation, *secretarial and administrative practice, *data processing, (d) an extended essay which will be prepared and written during the session.

N.B. Subjects marked with an asterisk can only be studied in the second year if the student has not previously been examined in them at the end of the first year.

Higher National Certificate in Business Studies (Public Administration option)

The first year subjects will be offered on Mondays and are as follows: (a) economics of public finance I (b) introduction to local government administrative practice, (c) government and public administration I.
The second year subjects will be offered on Tuesdays and are as follows: (a) economics of public finance II, (b) social policies and social needs, (c) government and public administration II, (d) an extended essay which will be prepared and written during the session.

Department of Chemistry and Biology

Head of Department: J. J. Betts, BSc (Lond), PhD (Cantab), PhD (Birm), FRIC

The Department of Chemistry and Biology

It is the policy of the Department that the courses it offers should enable any student, no matter what his or her initial qualifications might be, to achieve the maximum development of his or her potential ability. Staff of the Department are committed to this principle and every effort is made through tutorial work and personal guidance to encourage the student to achieve this end. With this in mind the courses offered will enable:

(a) the full-time student with two G.C.E. 'A' level passes or a good O.N.C. in Sciences to proceed to a degree (B.Sc. Sciences) and subsequently to a higher degree (M.Sc. or Ph.D.).

(b) the full-time student with one G.C.E. 'A' level pass or an O.N.C. or O.N.D. in Sciences to proceed to a Higher National Diploma in Chemistry or Applied Biology, then to Graduateship of the Royal Institute of Chemistry or Membership of the Institute of Biology respectively (honours degree equivalents), and finally to a higher degree (M.Sc. or Ph.D.).

(c) the part-time student with an O.N.C. in Sciences to proceed to a Higher National Certificate in Chemistry or Medical Laboratory subjects. Those with H.N.C. Chemistry may then proceed to a B.Sc. or B.Sc. Honours in Chemistry, and finally to a higher degree (M.A., M.Sc. or Ph.D.).

The scheme of courses allows students to transfer from part-time to full-time courses and vice versa.

The Departmental laboratories are equipped with a wide range of modern and sophisticated instruments, and lecture theatres incorporate audio-visual systems. Staff of the Department are also convinced of the importance of collaboration with industry. The subject matter of most courses offered has an industrial bias, and sandwich schemes enable students to become aware of the ways in which principles are applied in an industrial situation. The Department is participating in a number of joint projects with industry and would welcome an extension of this area of activity

Research

The Governors of the Polytechnic offer a number of Research Assistantships and these may be supplemented by Science Research Council Scholarships.

The equipment in the research laboratories in the Department includes instruments for infrared, ultraviolet, visible, nuclear magnetic resonance, and atomic absorption spectroscopy, gas chromatography, a variety of radiochemical and electrochemical equipment, a refrigerated high speed centrifuge, direct reading Warburg apparatus, an amino-acid autoanalyser, electro-physiology recording assemblies, sterilisation and incubation facilities, a fluorescence microscope equipped for photomicrography, an ultramicrotome, an electron microscope and an animal house.

Areas of research activity at present include (1) Chemistry: coordination chemistry, synthetic aromatic and heterocyclic chemistry, sterically hindered basic dyes, reaction kinetics; (2) Biology: carbohydrate metabolism, serotaxonomy of fungi, assessment of fungicides as timber preservatives, cytogenetics of sand dune plant populations, microbial ecology of aquatic environments; (3) Environmental Science: solvent extraction and absorptive bubble separation methods, distribution and removal of contaminants in water.

CHEMISTRY

Master's Degree (M.A.) in Analytical Chemistry of the University of Lancaster (I) (DES4437)

Course Adviser: Dr D. Brattan

A two-year and one-term course leading to the degree of Master of Arts.
Qualifications for entry: entrants will be expected to be over the age of 21 and hold either a degree of a British university or the C.N.A.A., with chemistry as a main subject, or the Graduateship of the Royal Institute of Chemistry, or an equivalent qualification.

Tutor: Dr J. W. Dodd. *Curriculum:* general topics: practice of analysis, statistics/computing, classical/separative methods, electronics/instrumentation, special lectures (as seminars); spectroscopic methods: uv/visible, X-ray, atomic, mass, vibration and spin resonance spectroscopy; non-spectroscopic methods: electrochemical, radiochemical and thermal methods. A research project.

Attendance: one full day and one evening per week (Wednesday)

Examinations: theory examinations will be held at the end of the second year. During the following term students will undertake their project.

Qualification: students successful in the examinations and who reach a satisfactory standard in a project and assessed course work will receive the degree of M.A. awarded by the University of Lancaster.

Master of Philosophy Degree (M.Phil.) or Doctor of Philosophy Degree (Ph.D.) by Research (I) (DES8021)

Course Adviser: Dr J. D. Hepworth

Qualifications for entry: entrants will have a degree of a British university or the C.N.A.A., with chemistry or biology as a main subject, or the Graduateship of the Royal Institute of Chemistry, or an equivalent qualification.

Attendance: individually arranged between the student and his supervisor. An M.Phil. degree can be obtained after 2 to 3 years of part-time study, either during the day or in the evening.

Qualification: students register either with their own university or with the C.N.A.A. and the degree is awarded on submission of a satisfactory thesis and successful completion of a viva.

Areas of research: (1) chemistry: coordination chemistry, synthetic aromatic and heterocyclic chemistry, sterically hindered basic dyes, reaction kinetics; (2) biology: immunology as a means of fungal taxonomy, carbohydrate metabolism, ecological genetics, neurophysiology related to animal behaviour, aquatic ecology; (3) environmental science: solvent extraction and adsorphic bubble separation methods, distribution and removal of contaminants in water.

Bachelor of Science Degree (B.Sc.) in Chemistry of the Council for National Academic Awards (II) (DES4232)

Course Adviser: Dr G. Dyer

A three-year course leading to the B.Sc. degree in Chemistry. The course is intended for mature students who have successfully completed a course of study for the Higher National Certificate/Diploma in Chemistry or in an allied field. Prospective students who hold a Teacher's Certificate with chemistry as a main subject may also be accepted into the course after completing a preliminary course of study.

During the first year of the course students will attend for one day and two evenings per week. Qualifying examinations will be held at the end of the second term, and students who pass these examinations will proceed to the Final Studies which make up the remainder of the course.

The Final Studies, extending over six terms, include the three main branches of chemistry, together with analytical chemistry and microbiology. A project will also be undertaken during the latter stages of the course.

Students who are successful in the final examinations will be awarded the B.Sc. (C.N.A.A.) degree. A pass with commendation may be awarded to students showing exceptional ability.

A Registration Fee of £32.00 is payable in instalments: £16.00 at the commencement of the course and £16.00 at the commencement of the third year.

Qualifications for entry: an H.N.C. or H.N.D. in Chemistry, or a Teacher's Certificate with chemistry as a main subject, followed by a preliminary course of study. Students entering the course should have completed satisfactory courses in mathematics and physics, eg. O.N.C. basic or G.C.E. 'A' level.

1st Year. *Tutor:* Dr J. D. Hepworth. *Curriculum:* Qualifying Studies (terms 1 and 2): inorganic, organic and physical chemistry, ancillary mathematics and physics. Final Studies (term 3): inorganic, organic, physical and analytical chemistry, mathematics and microbiology.

Attendance: Monday evening, and all day Wednesday and Wednesday evening

Examinations: qualifying examinations will take place at the end of the second term

2nd Year. *Tutor:* Dr G. Newton. *Curriculum:* inorganic, organic, physical and analytical chemistry, microbiology.

Attendance: all day Thursday and Thursday evening

Examinations: the two subjects analytical chemistry and microbiology will be examined at the end of the third term.

3rd Year. *Tutor:* Dr G. Dyer. *Curriculum:* inorganic, organic and physical chemistry, complementary studies, project.

Attendance: all day Tuesday and Tuesday evening for two terms

Examinations: the final examinations in chemistry will be held during the summer term

Qualification: Bachelor of Science degree awarded by the Council for National Academic Awards.

Preliminary course for entry to the Bachelor of Science Degree course in Chemistry of the Council for National Academic Awards (III) (DES4232)

Course Adviser: Dr G. Dyer

A one-year course providing entry to the B.Sc. degree course in Chemistry described above, for science teachers who possess a Teacher's Certificate with chemistry as a main subject or who have studied chemistry beyond G.C.E. Advanced level.

Tutor: Dr J. D. Hepworth. *Curriculum:* inorganic chemistry; review of the general chemistry of transitional and non-transitional elements, introduction to nuclear structure and radiochemistry; organic chemistry; review of the functional groups based on the electronic theory; physical chemistry; general review of thermodynamics, electrochemistry and kinetics.

Attendance: all day Thursday, *or* Wednesday and Thursday evenings

Qualification: successful students will be eligible to enter the first year of the three-year B.Sc. degree course in Chemistry

Graduate Membership of the Royal Institute of Chemistry (II) (DES2104)

Course Adviser: Mr J. Donnelly

A three-year course leading to the Graduate Membership examinations of the Royal Institute of Chemistry. The Grad. R.I.C. Part I examination is sat at the end of the first year and the Grad. R.I.C. Part II examination at the end of the third year.

Qualification for entry: H.N.C. Chemistry or equivalent qualification.

Curriculum: review and extension of chemical subjects studied: recent advances in inorganic, organic and physical chemistry.

Attendance: 1st Year: all day Wednesday and Wednesday evening; 2nd and 3rd Years: all day Monday and Monday and Tuesday evenings.

Examinations: Grad.R.I.C. Part I and Grad.R.I.C. Part II

Qualification: Graduate Membership of the Royal Institute of Chemistry

Higher National Certificate in Chemistry (III) (DES1061)

Course Adviser: Dr A. D. Jones

A two-year course to prepare students for the Higher National Certificate in Chemistry.

Qualifications for entry: Ordinary National Certificate with elective Chemistry, or passes in G.C.E. 'A' level chemistry and either mathematics or physics.

1st Year. *Tutor:* Dr G. Newton. *Curriculum:* inorganic chemistry; chemical bonding, atomic structure, valency, typical elements, radio-chemistry: organic chemistry; electronic theory of organic chemistry, functional group chemistry, stereo-chemistry: physical chemistry; thermodynamics, electrochemistry, kinetics: general studies.

Attendance: all day Tuesday and Tuesday evening

Examinations: internal

2nd Year. *Tutor:* Dr A. D. Jones. *Curriculum:* inorganic chemistry; transition elements, co-ordination compounds, carbonyls, interhalogens: organic chemistry; aromatic and heterocyclic chemistry, stereo-chemistry: physical chemistry; thermodynamics, electrochemistry, phase equilibria, surface and colloid chemistry; general studies.

Attendance: all day Thursday and Thursday evening

Examinations: internal, externally assessed

Qualification: Higher National Certificate in Chemistry

Licentiateship of the Royal Institute of Chemistry (III) (DES1113)

Course Adviser: Dr D. Mason

A one-year course in which the H.N.C. endorsement subject advanced analytical chemistry is studied. Successful completion of this course, together with approved ancillary mathematics and physics, fulfils the academic requirements for the Licentiateship of the Royal Institute of Chemistry.

Qualifications for entry: students must have reached a standard in chemistry which is equivalent to that of a Higher National Certificate.

Curriculum: radiochemistry, complexiметry, non-aqueous titrimetry, ion exchange resins, potentiometry, pH, electro-analysis, coulometry, polarography, amperometry, spectrometry, chromatography.

Attendance: all day Monday and Monday evening

Examinations: H.N.C. endorsement subject, advanced analytical chemistry

Qualification: Advanced Analytical Chemistry endorsement subject for Licentiateship of the Royal Institute of Chemistry

Scientific Glassblowing (IV) (DES8020)

Course Adviser: Mr D. Evans

Two ten-week courses covering the basic principles of glassblowing and the application of these principles to the fabrication of scientific equipment.

Curriculum: cutting, joining, T and Y joints, bending, blowing, reaming, internal seals

Attendance: Monday evenings, the first course commencing early January, 1976.

BIOLOGY

Higher National Certificate in Medical Laboratory Subjects (III) (DES3706)

Course Adviser: Mr F. Ramsden

A two-year course leading to the Higher National Certificate in Medical Laboratory Subjects, a qualification acceptable for State Registration. The examination scheme is based on a background of sciences appropriate to medical laboratory work together with one specialist subject from the range of clinical chemistry, haematology and serology, medical microbiology, histopathology and cytology.

To qualify for a Higher National Certificate the student must be successful in all the examinations scheduled. An integrated hospital training is an essential part of the course and students should hold a full-time post in a hospital or other approved laboratory.

Qualifications for entry: an Ordinary National Certificate in Sciences with a pass in medical laboratory science or basic elective biology: or G.C.E. passes in four appropriate subjects, two science subjects having been passed at 'A' level. There are special arrangements for holders of Higher National Diplomas in Science subjects. Further details can be obtained from the Course Adviser.

1st Year. *Tutor:* Dr R. Cotton. *Curriculum:* analytical chemistry techniques organic chemistry, biochemistry, cell physiology, molecular biology, specialist subject, general and related studies.

Attendance: one day (Wednesday) and one evening per week

Examinations: internal

2nd Year. *Tutor:* Mr F. Ramsden. *Curriculum:* organic and physical chemistry, biochemistry, cell physiology, molecular biology, specialist subject, general and related studies.

Attendance: one day (Tuesday or Thursday) and one evening per week

Examinations: internal, externally assessed

Qualification: Higher National Certificate in Medical Laboratory Subjects with appropriate specialist subject

Institute of Medical Laboratory Technology, Special (Advanced) Examination Course (III) (DES3366)

Course Adviser: Mr F. Ramsden

The subjects offered for this advanced examination are clinical pathology, haematology, blood transfusion and bacteriology. Other specialist subjects will be made available when there is a suitable demand.

The course is of two years' duration and will cover aspects of medical laboratory science in addition to the specialist subjects. The format will include lectures, tutorials and discussion of selected topics.

Attendance: one evening per week for 20 weeks in each of the two years. It is possible that some subjects may be organised on the basis of three weeks' full-time study in each of the two years.

Qualifications for entry: I.M.L.T. final examination or H.N.C. in Medical Laboratory Subjects

Examinations: Institute of Medical Laboratory Technology Special Examination in the appropriate subject

Diploma in Nursing of the University of London, Parts A and B (III) (DES1197)

Course Adviser: Dr J. J. Waring

The course is organized in two parts, a one-year course covering the examination requirements for Part A of the Diploma and a one-year course for Part B. Candidates for Part B will be examined on the causes and effects of disease and also in a branch of nursing in which they have specilaised. Additional optional subjects, (a) clinical teaching and (b) management, are also offered.

Qualifications for entry: full details are set out in a special pamphlet obtainable from the Course Adviser and can be stated briefly as:

Part A – Students must be registered nurses and must have a standard of general education equivalent to GCE with passes in English language and two other subjects at ordinary level. Students who do not have the required GCE passes may enter for a qualifying examination, details of which are obtainable from the Course Adviser.

Part B – A pass in Part A, and the candidate must be registered on the appropriate part of the Register of Nurses in relation to the branch of nursing offered for the examination, or equivalent status.

1st Year (Part A). *Tutor:* Dr C. Pullin. *Curriculum:* physiology, theory and practical; development of nursing as a profession, psychology.

Attendance: one day per week (Tuesday).

2nd Year (Part B). *Tutor:* Dr J. J. Waring. *Curriculum:* the causes and effects of disease, theory and practical; clinical teaching, management.

Attendance: one morning per week or one day per week if the management option is studied.

Qualification: Diploma in Nursing of the University of London

Department of Construction and Urban Studies

Head of Department: T. M. Ryan, BSc, (EstMan), FRICS, FIQS

The Department of Construction and Urban Studies

The Department specialises in courses leading to professional qualifications in Construction Technology and Management and in the various branches of Surveying.

Courses are organised on a full-time, sandwich or day-release basis and enable students to progress towards a variety of qualifications at Professional and Higher Technician level in the construction industry and its associated professions.

A major feature of the Department is the sandwich course at Higher National Diploma level, enabling students to spend several months working in industry as part of their course. This course leads directly to a one-year full-time course for the Finals of the Institute of Building. Development is proceeding on a wide front and a range of optional subjects is being progressively introduced. The intention is to offer students a sound technical education in fundamental subjects and enable a choice to be made in whichever specialist field the student is interested. A typical range of specialist fields is: Site and Office Management, Quantity Surveying, Local Authority Building Inspection, Property Management, Architecture, Construction Planning, Building Economics, Town Planning, Estate Agency and Valuation, and Civil Engineering.

Further developments will include degree courses in Urban Studies and related subjects. The Department has a wide range of contacts in the industry and the professions, and on successful completion of a course students from the Department have experienced no difficulty in obtaining satisfactory and rewarding employment.

Institute of Building, Final Examination Part II (II) (DES4622)

Course Adviser: Mr J. M. Patchett

A two-year course of study at first degree level, leading to the new Part II examination. The structure of the examination offers optional subjects in addition to the management disciplines of production and principles. The Institute's regulations should be consulted with regard to appropriate exemptions.

Curriculum: building production and management, principles of management, plus a choice of either (i) structural theory and design, (ii) environmental and services engineering, (iii) economic and quantitative analysis, or (iv) management practice.

Attendance: one day and up to two evenings per week

Examinations: Institute of Building

Qualification: Membership of the Institute of Building after successful completion of the Part III requirements

Institute of Building, Final Examination Part I (III) (DES4621)

Course Adviser: Mr S. R. Cardwell

A one-year course of study designed to prepare students for the Institute's examination.

Curriculum: building technology and practice, materials and environmental science, building law and contracts and economics of industry, plus one of the following subjects: (i) structural theory and design, (ii) electrical and mechanical services, (iii) economic and quantitative analysis.

Attendance: one day and one evening per week

Examinations: internal, externally assessed and/or Institute of Building

Qualification: Part I of the Institute of Building

Institute of Building, Licentiate Examination (IIINP) (DES4065)

Course Adviser: Mr S. R. Cardwell

A one-year course which leads to the Licentiate examination of the Institute of Building which is an examination for student and technician members and other exempted candidates who wish to proceed to the Higher Technician class of membership.

Curriculum: Group II: technology (2 papers), services and equipment (1 paper), measurement and economics (2 papers). Special arrangements can be made for other subjects including CGL1 627 Supplementary Subjects.

Examination: Licentiate examination of the Institute of Building

Qualification: academic requirements for the Licentiateship of the Institute of Building

Higher National Certificate in Building, Supplementary Studies (III)

Course Adviser: Mr S. R. Cardwell

Architectural Technicians who have gained a Higher National Certificate are advised to become members of the Society of Architectural and Associated Technicians. They are required to undertake further studies to obtain a Certificate of Supplementary Study in Building Technology and other optional additional subjects.

Building and Quantity Surveying Technicians who hold the Higher National Certificate in Building take one or more of the appropriate Certificates of Supplementary Study to gain exemption from the equivalent examinations in the Final Part I Examination of the Institute of Building and of other Professional Institutes.

Curriculum: building law (DES1119), economics of industry (DES1127), measurement and economics III (estimating) (DES1118), building technology I (DES3503), performance of buildings (DES8010), building regulations (DES8011), maintenance and adaptation of buildings (DES8012).

Attendance: one day or one evening per week

Examinations: internal, externally assessed

Higher National Certificate in Building (III) (DES1063)

Course Adviser: Mr S. R. Cardwell

A two-year course for technicians in Building, Architecture, Building and Quantity Surveying. It leads to the award of the Higher National Certificate and to the qualification of the Institute of Building, the Institute of Quantity Surveyors, the Society of Architectural and Associated Technicians, the Society of Surveying Technicians, and the Incorporated Association of Architects and Surveyors.

Qualifications for entry: students admitted to the course must possess either (1) the Ordinary National Certificate/Diploma in Construction or Building, or (2) any one of the following awards of the City and Guilds of London Institute provided that, in addition, students have passed the assessed examinations of the O.N.C. scheme in building technology 02, building science 02, and a final college examination in mathematics 01 : (a) the Full Technological Certificate for building crafts obtained under the C.G.L.I. regulations introduced in 1962 or later, or (b) the Certificate in General Foremanship Studies, or (c) the Construction Technicians' Certificate, Part II.

1st Year. *Tutor:* Mr S. R. Cardwell. *Curriculum:* technology of construction, services and equipment, measurement and economics.

Attendance: one day and one evening per week

Examinations: internal

2nd Year. *Tutor:* Mr S. R. Cardwell. *Curriculum:* technology of construction, services and equipment, measurement and economics.

Attendance: one day and one evening per week

Examinations: internal, externally assessed

Qualification: the Higher National Certificate in Building

Building Surveying and Control (IIINP) (DES8014)

Course Adviser: Mr S. R. Cardwell

A course over two years for Building Surveyors and Control Officers to cover the examinations of the Incorporated Association of Architects and Surveyors, the Institution of Building Control and other related external bodies.

Tutor: Mr S. R. Cardwell. *Curriculum:* Part Two. Construction technology, building control services, structures, town planning control, means of escape in case of fire. Final Part Three. Construction technology, building control, local government administration, thesis.

Attendance: one day and one evening per week

Examinations: internal, externally assessed

Quantity Surveying (III) (DES4417)

Course Adviser: Mr D. M. Horsley

Courses for Quantity Surveyors leading to the professional examinations of The Royal Institution of Chartered Surveyors and The Institute of Quantity Surveyors (new syllabus).

Qualifications for entry: applicants must be members of the appropriate professional body and have satisfied the conditions of entry to the examinations as external candidates which are laid down by that body.

Part 1 Examination Course (III)

Curriculum: construction measurement and valuation, construction technology, construction management and economics, law.

Attendance: one day and one evening per week

Duration: 18 months

Examinations: set externally by the professional bodies

Part 2 Examination Course (III)

Curriculum: construction measurement and valuation, construction technology, construction management and economics, law.

Attendance: one day and one evening per week

Duration: two years

Examinations: set externally by the professional bodies

Final Examination Course (II)

Curriculum: construction measurement and valuation, construction technology, construction management and economics, law.

Attendance: one day and one evening per week

Duration: two years

Examinations: set externally by the professional bodies

N.B. During the transitional period from the old to the new syllabus of the R.I.C.S. and I.Q.S., courses at Part 2 and Final level will be offered on the old syllabus.

Construction Services Surveying (III)

Course Adviser: Mr D. M. Horsley.

Courses for Quantity Surveyors leading to the Construction Services Surveying Certificate examination of The Institute of Quantity Surveyors.

Curriculum: Part A. mathematics, communication, services technology, contract administration.

Part B. technology, measurement, estimating and tendering.

Attendance: one day and one evening per week

Duration: two years

Examinations: set externally by The Institute of Quantity Surveyors

Estate Management and General Practice Surveying
(*Subject to DES approval*).

Course Adviser: Mr D. M. Horsley

Courses for students engaged in Estate Agency, Estate Management and Valuation leading to the examinations of the Royal Institution of Chartered Surveyors (VEAP Division) and the Incorporated Society of Valuers and Auctioneers. Syllabus changes are incorporated at the appropriate level.

Qualifications for entry: applicants must be members of the appropriate professional body and have satisfied the conditions of entry to the examinations as external candidates which are laid down by that body.

Part 1 Examination Course (III)

Curriculum: valuations, economics, law, building construction and surveying, central and local government, use and development of land.

Attendance: one day and two evenings per week

Duration: six months

Examinations: set externally by the professional bodies

Part 2 Examination Course (III)

Curriculum: valuations, land economics, law, building construction, accountancy, taxation, town planning, property management.

Attendance: one day and one evening per week

Duration: two years

Examinations: set externally by the professional bodies

Final Examination Course (II)

Curriculum: valuations, urban economics, law, building construction and property maintenance, town planning, property development and feasability study

Attendance: one day and one evening per week

Duration: two years

Examinations: set externally by the professional bodies

Higher National Certificate in Surveying, Cartography, Planning (Planning Option) (III) (DES4036)

Course Adviser: Mr C. Emmott

A two-year course for Planning Technicians leading to the award of a Higher National Certificate and exemption from the Practical Test in the examinations of the Royal Town Planning Institute.

Qualifications for entry: an Ordinary National Certificate in Surveying, Cartography and Planning or any other qualification considered by the Joint Committee to be equivalent.

1st Year. *Tutor:* Mr C. Emmott. *Curriculum:* planning practice, planning law and procedures, mathematics (statistical techniques), planning studio, general studies.

Attendance: one day and one evening per week

Examinations: internal

2nd Year. *Tutor:* Mr C. Emmott. *Curriculum:* aspects of physical planning, planning law and procedures, mathematics (information systems), planning studio, general studies.

Attendance: one day and one evening per week

Examinations: internal, externally assessed

Qualification: the Higher National Certificate in Planning

Quantity Surveying (III) (DES4417)

Course Adviser: Mr D. M. Horsley

Courses for Quantity Surveyors leading to the professional examinations of The Royal Institution of Chartered Surveyors and the Institute of Quantity Surveyors.

Curriculum: certain subjects of the Part I, Part 2 and Final courses including measurement, services, building

Attendance: one evening per week per subject

Examinations: set externally by the professional bodies

Civil Engineering Law and Arbitration (IIINP) (DES8013)

Course Adviser: Mr B. Carter

A 20-week course on law and arbitration to suit the needs of members of the Institution of Civil Engineers. In particular, it is aimed at members who wish to qualify for inclusion in the Institute's list of qualified arbitrators by attaining the standard required by the Arbitration Board.

Curriculum: English legal system, law of contract, contract administration, arbitration, tort, industrial law

Attendance: one evening per week

Examination: Institution of Civil Engineers

Higher National Certificate in Building, Supplementary Studies (III)

Course Adviser: Mr S. R. Cardwell

A course of study for holders of the Higher National Certificate or equivalent in Building to obtain a Certificate of Supplementary Study.

Curriculum: building law (DES1119), economics of industry (DES1127), measurement and economics III (estimating) (DES1118), building technology I (DES3503), performance of buildings (DES8010), building regulations (DES8011), maintenance and adaptation of buildings. (DES8012)

Attendance: one session per week per subject

Examinations: internal, externally assessed

Estate Management and General Practice Surveying (III)

Courses for the Royal Institution of Chartered Surveyors and the Incorporated Society of Valuers and Auctioneers.

Curriculum: certain subjects of the Part 1, Part 2 and Final courses including valuations, law, economics, town planning

Attendance: one evening per week per subject

Examinations: set externally by the professional bodies.

Institute of Building, Final Examination Part III (II) (DES1641)

A 13-week course to suit the needs of holders of the Institute of Building Final Examination Part II. The aim of the course is to prepare students for the submission of the report and attendance at the professional interview.

Curriculum: analysis of experience, assessment and evaluation of data, report writing, psychology and techniques of interviewing.

Attendance: one evening per week

Department of Electrical and Electronic Engineering

Head of Department: A. Palmer, BSc Tech, CEng, MIEE

The Department of Electrical and Electronic Engineering

This Department provides graduate and professional courses in electrical and/or electronic engineering. Tutorial, laboratory and project work are integral parts of all courses. The Department has separate well-equipped laboratories for experimentation in instrumentation and measurements, electronics and communications, electrical machines and power, control, computers and high voltage. Equipment available includes a PDP 8/E control computer, an E.A.L. 380 analogue computer, time and frequency domain analysis equipment and 500 kv high voltage test equipment.

A number of advanced courses are offered which normally lead to technician qualifications; however facilities do exist for transfer from these courses to engineering diploma and degree courses depending upon student performance.

Academic work is enhanced by the close relationship of the Department with industry. A substantial amount of consultative, development and testing work is carried out on its behalf.

Research within the Department is encouraged, and several members of the academic staff along with research students are actively engaged in both theoretical and practical projects. At the present time research is being carried out in the areas of analogue and digital technology and in control systems.

The Electrical and Electronic Technician and Technician Engineer

All part-time day courses offered by the Department provide a means of obtaining the necessary academic qualifications acceptable to the Institution of Electrical and Electronic Technician Engineers and to the Society of Electronic and Radio Technicians for all grades of membership. The holder of an appropriate C.G.L.I. Part II Technicians Certificate or an Ordinary National Certificate in Engineering with acceptable Electrical Engineering subjects satisfies the academic requirements of both organisations for technician status.

To satisfy the academic requirements for technician engineer status, a Higher National Certificate or Diploma in Electrical and Electronic Engineering or an appropriate C.G.L.I. Full-Technological Certificate is required.

Students desirous of ultimately attaining full technician and technician engineer status are advised to contact the above organisations.

Corporate Membership of the Professional Institutions

The Council of Engineering Institutions representing fifteen Institutions, including the Institution of Electrical Engineers and the Institution of Electronic and Radio Engineers was established in 1966 and holds the sole authority to confer the title 'Chartered Engineer' on members of the profession.

In order to attain the status 'Chartered Engineer' it is necessary for a candidate to either pass or obtain exemption from the Parts 1 and 2 Examinations set by the Council. A Higher National Certificate in Electrical and Electronic Engineering with three supplementary study subjects gives exemption from Part 1. After passing the Part 2 examinations a candidate is then qualified for consideration as an Associate Member of the Institution of Electrical Engineers and for a Graduate Member of the Institution of Electronic and Radio Engineers. If this is followed by a period of approved experience in the field of electrical or electronic engineering, he is then entitled to apply for admission to Corporate Membership and also gain the status 'Chartered Engineer' (C.Eng.).

Council of Engineering Institutions Part 2 Examinations (II) (DES4603)

This is a three-year course for students wishing to satisfy the academic requirements for election as an Associate Member of the Institution of Electrical Engineers or Graduate Member of the Institution of Electronic and Radio Engineers. Students who are required to study six subjects normally sit the examination in two blocks of three subjects taken over the three year period. Students who are required to study less than six subjects will, depending upon the subjects chosen, sit the examination after one or two years. Further particulars may be obtained from the Head of Department.

Qualifications for entry: a Higher National Certificate in Electrical and Electronic Engineering with three supplementary study subjects, or a Higher National Diploma in Electrical Engineering, or a pass in the Part 1 Examinations of the Council of Engineering Institutions.

Curriculum: subjects selected from engineer in society, electromagnetic fields and networks, electromechanical energy conversion, electrical power engineering, electronic engineering, computer engineering, communication engineering, mathematics, systems and control engineering.

Attendance: one day and one evening

Examinations: C.E.I. Part 2

Qualifications: academic requirements for Associate Membership of the Institution of Electrical Engineers or Graduate Membership of the Institution of Electronic and Radio Engineers

Higher National Certificate in Electrical and Electronic Engineering (III) (DES1079)

A two-year course leading to the award of the Higher National Certificate in Electrical and Electronic Engineering. Students are offered either a power or an electronics specialisation.

Qualifications for entry: an Ordinary National Certificate in Engineering or an approved equivalent qualification

1st Year. *Curriculum:* electrical and electronic principles, electrical and electronic engineering, mathematics.

Attendance: all day Friday and Wednesday evening.

Examinations: internal

2nd Year. *Curriculum:* electrical and electronic principles, and two subjects selected from electronic engineering, electrical power, utilisation of electrical energy, communication engineering, control systems, computer engineering, mathematics.

Attendance: all day Tuesday and one evening as required

Examinations: internal, externally assessed

Qualification: Higher National Certificate in Electrical and Electronic Engineering

Supplementary Studies to the Higher National Certificate in Electrical and Electronic Engineering (III)

Students who hold the Higher National Certificate may undertake supplementary studies in specialised topics. The holder of a Higher National Certificate in Electrical and Electronic Engineering with three supplementary study subjects is, at the discretion of his constituent Institution, eligible to sit the Part 2 Examinations of the Council of Engineering Institutions, success in which will satisfy the academic requirements for election as an Associate Member of the Institution of Electrical Engineers or Graduate Member of the Institution of Electronic and Radio Engineers. (Details of a course leading to C.E.I. Part 2 Examinations are given on page 42). Up to three supplementary study subjects may be studied over a period of one or more years. Subjects offered are electronic engineering (DES1129), control systems (DES1124), communication engineering (DES1174), mathematics (DES1146), electrical power (DES1132), computer engineering (DES3130), utilisation of electrical energy (DES1130).

Attendance: all day Tuesday and one evening as required

Examinations: internal, externally assessed

Qualification: Supplementary Study Certificate to the Higher National Certificate in Electrical and Electronic Engineering

Electrical Technicians' Certificates

A course for technicians who have already completed Part I of an Electrical Technicians' Course and who possess an Intermediate Certificate in Electrical Technicians' work. The Part II subjects are studied during the first two years and the Part III subjects during a subsequent year. Success in Part II leads to the award of the Electrical Technicians' Certificate, and successful completion of Part III meets the academic requirements for the Full Technological Certificate.

For students who have still to obtain an Intermediate Certificate, a course of study is available at the W. R. Tuson College.

Qualifications for entry: an intermediate certificate in Electrical Technicians' work, gives entry to the first year of the course. An Electrical Technicians' Part II Certificate gives entry to the final year.

Part II (DES7199)

1st Year (IV). *Curriculum:* electrical engineering principles, mathematics, industrial electronics or electrical power equipment.

Attendance: all day Wednesday and one evening

Examinations: internal

2nd Year (IIINP). *Curriculum:* mathematical applications, testing methods and reliability, instrument and measurement technology, electrical power equipment or industrial electronics.

Attendance: all day Thursday and one evening

Examinations: C.G.L.I. 281

Qualification: City and Guilds of London Institute's Electrical Technicians' Certificate, Part II

Part III (DES7200)

3rd Year (IIINP). *Curriculum:* industrial control systems, industrial electronics, transmission and distribution of electrical energy.

Attendance: all day Monday

Examinations: C.G.L.I. 281

Qualification: Academic requirements for the City and Guilds of London Institute's Full Technological Certificate

Telecommunication Technicians' Certificates

A course for technicians who have already completed Part I of a Telecommunication Technicians' Course and who possess an Intermediate Telecommunication Technicians' Certificate. The Part II subjects are studied during the first two years and the Part III subjects studied during a subsequent year. Success in Part II leads to the award of the Telecommunication Technicians' Certificate, and a Full Technological Certificate is awarded after successful completion of Part III.

For students who have still to obtain an Intermediate Certificate, a course of study is available at the W. R. Tuson College.

Qualifications for entry: an Intermediate Telecommunication Technicians' Certificate gives entry to the first year of the course. A Telecommunication Technicians' (Part II) Certificate or other equivalent qualification gives entry to the final year.

Part II (DES7188)

1st Year (IV). *Curriculum:* electrical principles, mathematics and telephony or radio and line transmission or computers.

Attendance: all day Wednesday

Examinations: C.G.L.I. 271 or internal

2nd Year (IIINP). *Curriculum:* electrical principles, mathematics and telephony or radio or computers.

Attendance: all day Thursday

Examinations: C.G.L.I. 271

Qualification: City and Guilds of London Institute's Final (Part II) Telecommunication Technicians' Certificate

Part III (DES7189)

3rd Year (IIINP). *Curriculum:* selected from advanced tele-communication principles, advanced communication radio, digital elements and switching principles, computer principles, advanced computers, advanced telephony.

Attendance: all day Friday

Examinations: C.G.L.I. 271

Qualification: City and Guilds of London Institute's Full Technological Certificate

Radio, Television and Electronics Technicians' Certificate

A course for technicians who have already completed Part I of a Radio, Television and Electronics Technicians' Course and who possess a Radio, Television and Electronics Technicians' Part I Certificate. The Part II subjects are studied during the two years. The Radio, Television and Electronics Technicians' Certificate is awarded on successful completion of Part II. For those students who have still to obtain a Part I Certificate, a course of study is available at the W. R. Tuson College.

Qualifications for entry: a Radio, Television and Electronics Technicians' Part I Certificate

Part II (DES7191)

1st Year (IV). *Curriculum:* mathematics, principles, radio and electronics.

Attendance: all day Wednesday

Examinations: internal

2nd Year (IIINP). *Curriculum:* radio and television theory and practice, testing methods.

Attendance: all day Thursday

Examinations: C.G.L.I. 272

Qualification: City and Guilds of London Institute's Radio, Television and Electronics Technicians' Certificate, Part II

Radio, Television and Electronics Mechanics' Certificate

A course for mechanics who have already completed Parts I and II of a Radio, Television and Electronics Mechanics' Certificate, and who possess the Radio, Television and Electronics Mechanics' Parts I and II Certificates. The Part III subjects are studied during the two years, and the Radio, Television and Electronics Mechanics Part III Certificate is awarded after successful completion of Part III. For students who have still to obtain the Part I and/or Part II Certificates, a course of study is available at the W. R. Tuson College.

Qualifications for entry: a Radio, Television and Electronics Mechanics' Part II Certificate

Part III (IIINP) (DES7155)

1st Year. *Curriculum:* television (colour and monochrome) theory and practical work.

Attendance: all day Monday

Examinations: C.G.L.I. 222

Qualification: City and Guilds of London Institute's Radio, Television and Electronic Mechanics' subject certificate in television (colour and monochrome)

2nd Year. *Curriculum:* additional television (colour and monochrome) theory and practical work.

Attendance: all day Thursday

Examinations: C.G.L.I. 222

Qualification: City and Guilds of London Institute's Radio, Television and Electronic Mechanics' Certificate, Part III

Aeronautical Engineering Technician's Certificate
*AVIONICS OPTION**

A two-year course for technicians engaged in the manufacture and maintenance of aircraft to be offered at the Polytechnic for the first time in 1975/76 and providing specialisation in either mechanical or avionic branches of aeronautical engineering.

Qualifications for entry: Students will normally be admitted to the course after having successfully completed Part I of the course for Aeronautical Engineering Technicians or having maturity and experience indicating an ability to complete the course successfully.

PART II

1st Year (IV) **and 2nd Year** (IIINP) *Curriculum:* mathematics, science, avionics technology 'A', avionics technology 'B', general studies.

Attendance: one day and one evening per week

Examinations: 1st year internal, 2nd year CGLI 258

Qualifications: City and Guilds of London Institute Aeronautical Engineering Technician's Certificate Part II

* Details of the Mechanical Option are given on page 67 in the section devoted to courses by the Mechanical Engineering Department.

Evening Courses

H.N.C./O.N.C. in Engineering

The Department does not offer any evening-only courses leading to Higher/Ordinary National Certificates in Engineering. A clearing house will be in operation in the region in respect of enrolments in these courses for the 1975-76 session, and intending students are advised *either* to consult the Head of Department, who will be able to advise concerning the centres at which they are available, *or* to apply to the Secretary, North Western Regional Advisory Council for Further Education, 36 Granby Row, Manchester M1 7AT (Tel: 061-228 1033) for information.

Supplementary Studies to the Higher National Certificate in Electrical and Electronic Engineering (III)

Students who hold the Higher National Certificate may undertake supplementary studies in specialised topics. The holder of a Higher National Certificate in Electrical and Electronic Engineering with three supplementary study subjects is, at the discretion of his constituent Institution, eligible to sit the Part 2 Examinations of the Council of Engineering Institutions, success in which will satisfy the academic requirements for election as an Associate Member of the Institution of Electrical Engineers or Graduate Member of the Institution of Electronic and Radio Engineers. (Details of a course leading to C.E.I. Part 2 Examinations are given on page 38). Up to three supplementary study subjects may be studied over a period of one or more years. Subjects offered are electronics (DES1129), control systems (DES1124), communication engineering (DES1174), mathematics (DES1146), electrical power (DES1132), computer engineering (DES3130), utilisation of electrical energy (DES1130).

Attendance: from one to three evenings per week

Examinations: internal, externally assessed

Qualification: Supplementary Study Certificate to the Higher National Certificate in Electrical and Electronic Engineering

Telecommunication Technicians' Certificate

A course for technicians who have already completed Part I of a Telecommunication Technicians' Course and who possess an Intermediate Telecommunication Technicians' Certificate. The Part II subjects are studied during the two years. The Telecommunication Technicians' Certificate is awarded on successful completion of Part II. For students who have still to obtain an Intermediate Certificate, a course of study is available at the W. R. Tuson College.

Qualification for entry: an Intermediate Telecommunication Technicians' Certificate.

Part II (DES7188)

1st Year (IV). *Curriculum:* electrical principles, mathematics, either telephony or line plant practice or computers B.

Attendance: three evenings per week

Examinations: C.G.L.I. 271

2nd Year (IIINP). *Curriculum:* electrical principles, mathematics, telephony, computers C.

Attendance: three evenings per week

Examinations: C.G.L.I. 271

Qualification: City and Guilds of London Institute's Final (Part II) Certificate in Telecommunication Technicians' Work

A Preparatory Course for the Open University Technology Foundation Course T.100 (IV) (DES8045)

Organisers: H. S. Senior/T. J. Terrell

A course of 10 evening lectures running from October to December, primarily designed for students who are considering, or who are already enrolled for the Open University Technology Foundation Course, T100. The course will include some fundamental mathematical content together with introductions to the Standard International System of Units, graphical analysis and electrical measurement.

The course aims to give guidance to students to enable them to understand more fully the Open University system of learning and hence be able to organise themselves into efficient Open University students.

Enrolment will probably be on Thursday evening, 9th October, 1975.

Short Courses

Short courses are held in the Department for local industry on an afternoon and evening or evenings only basis. The course details are arranged with training officers in industry or, in the specialized evening courses they can be arranged with the co-operation of the outside lecturers who may be involved. A programme for each specialized evening short course is usually available in advance.

Courses already proposed for one evening a week, are:

Digital Communications—4 lectures, and to be held in the Autumn term.

Mini Computers—6 lectures, and to be held in the Spring term.

Logic and Digital Systems–4 lectures, also to be held in the Spring term.

Department of Language, Humanities and Special Education

Head of Department: H. E. Probyn, BA

The Department of Language, Humanities and Special Education

The Department of Language, Humanities and Special Education currently offers a four-year full-time course leading to the Teacher's Certificate of the University of Lancaster, and to the Degree of Bachelor of Education, with special emphasis on the teaching of the severely subnormal child, and incorporating full qualified teacher status for all branches of education. In Languages, the Department offers a wide range of courses for full-time students on Diploma courses, and on a part-time basis with special relevance to the needs of teachers and of industry. Professional courses are offered in Journalism, and secretarial and language skills are developed together in courses for personal assistants and bi-lingual secretaries. A large-scale modular degree course in Humanities is being planned, and if approved will be offered in 1976.

Block Release Course

Certificate of the National Council for the Training of Journalists (DES2368)

Course Adviser: Mr E. Newell

In conjunction with the National Council for the Training of Journalists, two-year block release courses are arranged in preparation for the Council's Proficiency Test which takes place at the end of a student's apprenticeship in the newspaper industry.

Qualifications for entry: students must have reached the age of 16 and must produce evidence of a good general education. At the end of each year of the course students must take an examination in each subject.

The regulations require a student to obtain a shorthand certificate at 100 w.p.m. before he can take his Proficiency Test.

Each course will include eight weeks' full-time study from 9.00am. on Mondays to 5.00pm. on Fridays. The dates of the courses during 1975-76 are as follows for both years of the course:

First year courses: September to November, 1975; February to May, 1976.

Second year courses: November 1975 to February 1976 (excluding Christmas vacation); May to July, 1976 (excluding Spring vacation)

1st Year (IV). *Tutor:* Mr J. Hudson. *Curriculum:* use of language, newspaper practice, shorthand, public administration, current affairs.

Examinations: internal

2nd Year (IIINP). *Tutor:* Mr A. C. Roylance. *Curriculum:* use of language, public administration, newspaper practice, shorthand, newspaper law.

Examinations: internal and external

A copy of the explanatory leaflet summarising the training scheme and giving the regulations for admission can be obtained from the Director, The National Council for the Training of Journalists, Harp House, 179 High Street, Epping, Essex. (Tel 0378-2395).

Part Time Courses

Advanced Certificate of the University of Lancaster in the Teaching of Mentally Handicapped Children (III) (DES4756)

Course Adviser: Mr A. D. Feachnie

A two-year part-time course for qualified teachers in ordinary schools and special schools who wish to follow an advanced course of training in teaching, (a) back ward children in ordinary schools, (b) E.S.N. (M) children in special schools, or (c) E.S.N. (S) children in special schools (including options relating to Adolescence and Pre-school education).

The certificate has received the approval of the Burnham Committee for an incremental award.

Qualifications for entry: applicants must be qualified teachers with a minimum of two years' teaching experience.

Curriculum: educational psychology, philosophy of education, social science, history and organisation of special education, educational techniques and causes of mental handicap and learning difficulties.

Attendance 1st year: all day Tuesdays and Wednesday evenings
2nd year: all day Thursdays and Wednesday evenings

Examination: internal, externally assessed

Qualification: Advanced Certificate of the University of Lancaster in the Teaching of Mentally Handicapped Children

Course for Teachers of Mentally Handicapped Children & Adults (III) (DES8058)

Course Adviser: Mr A. D. Feachnie

This 20-week part-time course will offer three distinct options in the area of "Communication". Only *one* of these will be offered each year.

Areas:

(a) Language and the Mentally Handicapped
(b) Creative Activities and the Mentally Handicapped
(c) Number (including pre-number) and Mental Handicap.

(The area for presentation this year has not yet been selected—this information will be advertised later).

These courses are designed for those (qualified teachers, staff in adult training centres, nurse-tutors, social workers, etc.) whose professional role is largely that of concern for the development of mentally handicapped children and/or adults.

Attendance: Wednesdays—10.00 a.m.—4.00 p.m. (approximately January to June)

Course for Classroom Assistants in Special Schools for the Mentally Handicapped (III) (DES8057)

Course Adviser: Mrs M. J. Finch

A one-year part-time course for classroom assistants in special E.S.N.(M) and E.S.N.(S) and hospital schools for the mentally handicapped.

Qualifications for entry: N.N.E.B. Certificate and/or appropriate experience.

Curriculum: duties and responsibilities of classroom assistants; causes, assessment, diagnosis of mental handicap; normal and abnormal child development; organisation of special education psychological development; the mentally handicapped child in school, family and society; social services and the handicapped.

Attendance: Mondays 10.00 a.m. to 4.00 p.m.

Institute of Linguists Diploma. Royal Society of Arts Certificate in the Teaching of Modern Foreign Languages to Adults (IIINP)

Course Adviser: Mr D. Swift

A four-year course, part-time day and evening *or* evening only, for Teachers and intending Teachers who wish to obtain a graduate equivalent language qualification in the terms of the Burnham Primary and Secondary Report. The course is also suitable for those who wish to gain a language qualification for other purposes. Languages offered are French, German, Spanish, Russian and Italian.

Qualification for entry: a minimum of one G.C.E. 'A' level or its equivalent in the chosen language, though students may be admitted to any year of the course dependent upon their entry qualifications.

Intermediate; (DES: French 2641, German 2645, Spanish 2649, Russian 2659, Italian)

1st Year. *Tutor:* Mr W. Hackl. *Curriculum:* conversation, summary, interpreting, translation into English.

Attendance: one half day and one evening, *or* two evenings per week.

Examinations: internal.

2nd Year. *Tutor:* Mr S. Brown. *Curriculum:* background composition, summary, translation to and from English, oral work.

Attendance: one half-day and one evening, *or* two evenings per week.

Examinations: Institute of Linguists.

Qualification: Intermediate Diploma of the Institute of Linguists.

Final; (DES: French 3361, German 2646, Spanish 3359, Russian 2660)

1st Year. *Tutor:* Mr K. Jenkinson. *Curriculum:* culture and institutions of the country concerned, principles of language teaching, period of teaching practice, foreign language instruction.

Attendance: one half-day and one evening, *or* two evenings per week.

Examinations: R.S.A. followed by a period of probationary teaching.

Qualification: Certificate in the Teaching of Modern Foreign Languages to Adults of the Royal Society of Arts.

2nd Year. *Tutor:* Mr T. Weymouth. *Curriculum:* prepared talk, interpreting, essay, precis, translation to and from English, general knowledge of the country concerned, special subject.

Attendance: one half-day and one evening, *or* two evenings per week.

Examinations: Institute of Linguists.

Qualification: Final Diploma of the Institute of Linguists leading to Membership of the Institute of Linguists (M.I.L.).

Royal Society of Arts Certificate in the Teaching of Modern Foreign Languages to Adults (IIINP)
(DES: French 3361, German 2646, Spanish 3359, Russian 2660, Italian)

Course Adviser: Mr T. K. Jenkinson

A one-year course, part-time day and evening *or* evening only, for Teachers and intending Teachers of modern foreign languages to adults in Technical Colleges and Evening Institutions, who have not yet undergone a period of specialised foreign language teacher-training. Serving qualified teachers of languages in Schools (for example teachers of French in Primary Schools) may also find it helpful and useful as a 'refresher' course. Languages offered are French, German, Spanish and Russian.

Qualifications for entry: candidates must be at least 21 years of age by the date of the written examination. They should normally have a minimum of five G.C.E. subjects at 'O' level and one at 'A' level, or the equivalent. In addition a high standard of fluency in English and a foreign language is necessary; a normal minimum qualification in the foreign language would be, for example, Associate of the Institute of Linguists or R.S.A. III with distinction.

Curriculum: culture and institutions of country concerned, principles of language teaching, period of teaching practice.

Attendance: one half-day and one evening, *or* two evenings per week.

Examinations: R.S.A. followed by a period of probationary teaching.

Qualification: Royal Society of Arts Certificate in the Teaching of Modern Foreign Languages to Adults.

Royal Society of Arts Certificate in the Teaching of English as a Second or Foreign Language (IIINP) (DES8056)

Course Adviser: Miss L. Donaghie

A one-year course, part-time day and evening *or* evening only, for Teachers or intending Teachers of English as a second or foreign language in Further Education Colleges and Private Language Schools *or* as a second language in Primary and Secondary Schools.

Qualifications for entry: candidates must be at least 21 years of age by the date of the written examination. They should be graduates of a British University *or* qualified teachers trained in the United Kingdom or have passed the R.S.A. Preliminary Examination in English. Candidates for the Certificate in English as a second language for those teaching in primary or secondary schools must be recognised as qualified teachers and should *normally* have completed their probationary period prior to the Session in which they wish to enter for the examination.

Curriculum: principles of language teaching, aspects of English involved in English as a second or foreign language *or* aspects of English and extended essay; use of language teaching materials and aids; a period of teaching practice.

Attendance: one half-day and one evening *or* two evenings per week.

Examinations: written and oral examinations and assessed teaching practice.

Qualification: Royal Society of Arts Certificate in the Teaching of English as a second or foreign language for those teaching in Further Education Colleges and Private Language Schools *or* Certificate in the teaching of English as a second language for those teaching in primary and secondary schools.

Special Courses in Foreign Languages for Industry

Throughout the session, the Department will run intensive short courses in languages to suit the requirements of particular industries. The courses are at beginner or advanced levels in French, German, Spanish and Russian. They can be held either in the evening or during the day and normally consist of 20 two-hour lectures.

These courses will be arranged according to demand and firms or individuals are invited to write to the Head of Department.

Department of Management

Head of Department: E. K. Langham, BSc (Econ), CEng, MIMechE, FIProdE

The Department of Management Studies

The Department occupies a suite of management teaching and seminar rooms on the Polytechnic site. A well qualified and experienced team of lecturers is supported with closed circuit television and computer terminal facilities.

In addition to the operation and development of management subjects throughout the Polytechnic, the department provides programmes of study for the courses which follow on pages 50 to 56.

Lancastrian School of Management

Centered on the Preston Polytechnic, the Lancastrian School of Management is responsible for the co-ordination and development of all the comprehensive range of management education and training services sponsored by the new Lancashire Education Authority. Residential and day courses in numerous subject areas cater for the needs of all levels of management. The School offers a full consultancy service and will undertake research assignments in the management field.

Organisations can take advantage of the programmes offered, or have courses specifically designed to meet their individual requirements.

Heskin Hall Management Centre, the residential centre for the Lancastrian School of Management, offers excellent lecturing and seminar accommodation in a 16th Century Manor House. The Hall is situated at Eccleston near Chorley close to the M6 and M61 Motorways and offers full residential and catering facilities.

The Management Centre is available to organisations for any of the planned courses or they may use the facilities for their own development programmes.

For further details please contact:—

Mr C. W. Cunliffe, Head of Short Course Unit,
Lancastrian School of Management, Preston Polytechnic.

Diploma in Management Studies (Public Services) (II) (DES2226)

Course Leader: Mr J. Hayes

This course covers three years of study on one half-day and one evening per week. A residential period of three days will be held each year.

The first stage of the course is intended to provide opportunity for students normally of different experience and qualification to acquire a uniform background of knowledge before proceeding to the final stage.

1st Year (Stage I). Finance in public services, public law, quantitative techniques, applied economics, human aspects, public service administration and management principles and practice.

2nd Year (Stage II). Management principles and practice, financial control, management of external relationships, and a project based upon the employment authority of the candidate.

3rd Year (Stage II). Corporate policy, operational research, financial control, personnel management and industrial relations.

The residential parts of the programme are devoted to group activities and participatory work for which part-time study by itself allows inadequate opportunity.

The project in the second year of study allows the student to relate academic material to a practical situation.

The award of the Diploma is conditional upon satisfactory performance in examinations (externally assessed), project and in course work. A student must also fulfil attendance requirements.

For entry to Stage I a student must hold either:

(i) A degree of a British University or
(ii) A diploma in Technology of the National Council for Technological Awards or
(iii) A Higher National Diploma or
(iv) A Higher National Certificate with endorsements or evidence of suitable practical experience or
(v) Membership of an approved professional body or
(vi) Some other qualification acceptable to the Diploma Committee.

Students should be at least 23 years of age before commencing Stage I.

Students of 27 years or over without the above academic qualifications but with at least four years practical experience of suitable professional or administrative responsibility may be admitted.

The Diploma is awarded by the Council for National Academic Awards (CNAA) and holders may display the letters D.M.S. after their names. In addition with approved managerial experience, they are also eligible for corporate membership of the British Institute of Management (A.M.B.I.M.).

Diploma in Management Studies (Education Management) (II) (DES2226)

Course Leader: Mr N. R. Hall

An Education Management option has now been added to the Diploma in Management Studies programme. The course aims to give teaching and administrative staff a knowledge of the skills and techniques of management applicable to the ever more complex educational units developing at the moment. This programme has been developed in conjunction with the Chorley and Poulton Colleges of Education.

The subject of Education Management has been introduced in years 2 and 3 instead of Financial Control.

Diploma in Marketing Part III (III) (DES3942)

Course Leader: Mr A. J. Duncalf

The objective of this new Diploma examination is to enhance candidates' skills in harnessing marketing concept and techniques to the planning and execution of short and long term corporate objectives.

Entry to the Diploma stage will be confined to students who have satisfactorily completed Parts I and II, the Certificate stage, or students who can present alternative acceptable qualifications.

The four Diploma examination papers consist of the following topics:—

(i) International Aspects of Marketing
(ii) Marketing Planning and Controls
(iii) Management Organisation and Communications
(iv) Marketing Analysis and Decision (case-project).

This final stage of the Diploma takes one year's study and will be available on one half-day and one evening per week, or two evenings per week.

Certificate in Supervisory Studies (III) (DES2246)

Course Leader: Mr A. J. Duncalf

This is a one-year course of a general character to give men and women supervisors an opportunity to study their jobs in relation to modern works organisation. It provides instruction in the general principles of supervision and the basic supervisory skills. It is not only suitable for those in established posts in supervision, but also for those who wish to train themselves for promotion to supervisory posts.

The development of students is provided for by participative exercises including discussions, case studies, and role playing exercises. Concentrated residential study is included in the course and a residential period is provided for this purpose.

Candidates for admission to the course should normally be not less than 21 years of age, but those below this age, holding supervisory posts or considered to be potential supervisors may be admitted at the discretion of the Director. No academic qualifications are laid down as entry conditions to the course but students should have an educational background such as will enable them to benefit from the course with a reasonable expectation of success.

The course will normally be held on one full day or one half-day plus one evening per week. Special courses can be developed to meet the needs of particular industries. Flexibility of course content and times of attendance can be obtained to suit specific requirements. The course can be provided on a block release basis, modular basis, or variations of these, depending upon the needs of the industry.

Certificate for Office Supervisors

A separate certificate in supervisory studies course specially designed for office supervisors will also be offered both in the form of a one-year sessional course, on a day-release basis or one half-day and one evening basis and as a short-term course to meet the needs of any individual industry or firm.

Institute of Administrative Management

Certificate in Administrative Management (IV) (DES3030)

Course Leader: Mr T. W. K. Poyner

A one-year course will be offered both on a whole day a week basis, and on a part-time day and evening basis, to suit the convenience of employers. The course is of post O.N.C. and post N.E.B.S.S. level and is particularly suitable for office supervisors.

A ten-week full-time course will also be run during the Autumn Term, commencing October, 1975.

Institute of Production Control

Diploma in Production Control

Course Leader: Mr T. W. Thornley

The course is designed for people who are training for, or are engaged in, the practice of production control.

The subjects to be studied are as follows:—

Organisation and management, communications, production planning and documentation, material control, statistics and operational research, and computers and systems analysis.

The student is required to submit a project during his course of study. Ideally, this will involve the identification of a problem within his own organisation, and an analysis of this problem, using knowledge gained from the course.

The course also includes a compulsory residential weekend.

The course can be run on a full or part-time or on a modular basis. In all probability, it will be on a part-time basis, either over one year, one full day and one evening, or over two years, one full day each year.

Examinations: One three-hour, three two-and-a-half hours, and two two-hour papers. The project is also examined.

Qualifications for Entry: Ordinary National Certificate or a City and Guilds Full Technological Certificate or equivalent qualification. Candidates of mature age who have been engaged in the practice of Production Control for a number of years will be admitted if they can satisfy the Director of their ability to profit from the course.

Institution of Works Managers

Course Leader: Mr W. E. Illston

Certificate in Industrial Management (III) (DES2240)

This is a course covering two years of study on one half-day and one evening per week. Candidates take the I.W.M. examination at the end of each year. Intending students should obtain a copy of the syllabuses and regulations from the I.W.M. Local Education Officer, Mr R. J. E. Horton, Thorn Lighting Industries Ltd., 176 Fylde Road, Preston (Telephone 51261) or Mr. John Axon at the same address.

1st Year. *Curriculum:* Production analysis, statistics, economic analysis, marketing, organisation studies, communications.

Classes will be held on Wednesday afternoons and evenings.

2nd Year. *Curriculum:* Production analysis, industrial finance, psychology and sociology, industrial relations, management of human resources.

Classes will be held on Tuesday afternoons and evenings.

Candidates for the Certificate Examination must register as student members of the Institution of Works Managers before the 31st October. Application forms can be obtained from Mr R. J. E. Horton and students are responsible for submitting them to the I.W.M. Head Office before closing date.

Certificate in Industrial Relations (III) (DES4496)

The Polytechnic offers the optional subject of Industrial Relations as a course complete in itself, aimed at providing mature industrial managers with as full an undertanding as is practicable of the complexities of this subject. Membership of this course will be open to non I.W.M. members, although if the student wishes to take the examination he will need to become a member of the Institution. The course will cover the related fields of personnel management, law, psychology and sociology in a series of about thirty evening lectures on Tuesdays during the academic year.

In the case of university graduates appropriately qualified and experienced, the possession of this certificate may enable them to gain direct entry to the course leading to the Diploma in Industrial Management.

Diploma in Industrial Management (III) (DES2241)

A one-year course leading to the academic requirements for corporate membership of the Institution of Works Managers.

This course represents the management in action part of the candidates training where the knowledge gained on the Certificate Course is put to work and will include case studies, business simulations, group dynamics and similar methods. It will also include an integrated study of Industrial Management Policy:—

Qualifications for entry: Candidates must—

(a) Hold the Certicate in Industrial Management or
(b) Have obtained exemption therefrom and must be acquiring industrial experience and
(c) Must be an Associate of the Institution.

Curriculum: Environmental studies, trade union studies or industrial law, industrial management policy.

Classes will be held on Thursday afternoons and evenings and there will be a residential weekend.

Examination: Two written papers, a case study paper and a report on an analysis of an organisation.

Qualifications: Diploma in Industrial Management.

Institute of Practitioners in Work Study, Organisation & Methods

Course Leader: Mr P. A. Flynn

Management Services Certificate (IV) (DESZZZ)

A one-year part-time course for new entrants which will include a considerable amount of practical work in a fully equipped work study laboratory.

Qualifications for entry: Students must satisfy the Director, through the Head of Department, of their ability to benefit from the course.

Curriculum: Work study I, work study II, motivation and communication.

Attendance: One afternoon and one evening per week.

Qualifications: Management Services Certificate.

Management Services Diploma (III)

A two-year part-time course leading to the Management Services Diploma. Applicants must have been accepted as an affiliate of the Institute of Practitioners in Work Study, Organisation and Methods and syllabuses may be obtained from the General Secretary, I.W.S.O.M., 8-10 River Front, Enfield, Middlesex.

Qualifications for entry: Members of the Institute who—

(a) Hold a Degree or H.N.D. or City and Guilds 255 or an approved professional qualification or in exceptional circumstances can satisfy the Institute as to their general academic level, and
(b) Have obtained the Management Services Certificate.

1st Year. *Curriculum:* Management services I, management services II, behavioural sciences, personnel function.

2nd Year. *Curriculum:* Management services function, finance function, organisation, statistics.

Qualifications: Management Services Diploma.

Methods-Time Measurement Association (IIINP) (DES3890)

Course Adviser: Mr P. A. Flynn

The Methods-Time Measurement Association is the United Kingdom branch of the International Methods-Time Measurement Association. Persons wishing to use methods-time measurement data should be properly trained and possess certificates of competence in the specific M.T.M. technique. The Polytechnic course offers preparation for the three grades of Certificate.

All three courses will be conducted by well qualified and experienced Methods-Time Measurement Association lecturers.

Syllabuses and regulations for admission can be obtained from the Secretary, Methods-Time Measurement Association Ltd, PO Box 20, 31 Battersby Lane, Warrington, Lancs.

M.T.M. 1 Certificate. This course is designed for work study practitioners and other persons intending to use pre-determined motion time systems when job cycle times are less than one minute.

Curriculum: the theory and practice of M.T.M. 1

Attendance: two evenings per week for one session.

M.T.M. 2 Certificate. This course is the second general level system and is not as detailed as M.T.M. 1 but has a greater speed of application. The course is designed for work study practitioners, rate fixers and persons intending to use pre-determined motion time systems when job cycle times are greater than one minute.

Curriculum: the theory and practice of M.T.M. 2.

Attendance: two evenings per week for 12 weeks.

M.T.M. 3 Certificate. This is the most recently evolved system of M.T.M. and it is not as detailed as M.T.M. 2. The course is intended for holders of the M.T.M. 2 Certificate only.

Curriculum: the theory and practice of M.T.M. 3

Attendance: the course will be held on two evenings per week for five weeks following the end of the M.T.M. 2 course.

Institute of Personnel Management

Course Leaders: T. O'Brien E. Hyland

Institute of Personnel Management Diploma Part I Examination at Blackpool Technical College in association with Preston Polytechnic (III) (DES4289)

The Part I (Associate) examination aims to provide an awareness of the relevant aspects of those disciplines underlying the practice of personnel management; to enable students to achieve a working knowledge of personnel administration and use of its major components (training, development, industrial relations and employee services); and to prepare the student to undertake the study required for the Part II (Membership) examination.

Duration of Course: Two years part-time.

Subjects: (*Compulsory*) Statistics, psychology, sociology, economics, general personnel management (*plus options*) employment and employee services *or* industrial relations *or* training and development.

Part II Membership (III) (DES4305) examination (at Preston, earliest start 1976)

Normally this examination will be taken at least 12 months after the completion of Part I. It aims to provide an integrated course to enable students to achieve the depth of knowledge necessary to practice personnel management or one of its specialist functions at the level required for Membership of the Institute.

The syllabus is designed for those with experience of Personnel Management or one of its specialist functions and will prove difficult for those without such experience. The examinations may be taken only by those who have successfully completed the Part I (Associateship) examinations and hold associateship membership of the Institute.

Duration of Course: Two years part-time.

Compulsory Papers: Applied behaviour science, management systems, personnel management policies, and either: industrial relations (with special reference to legal aspects) or training and development.

A period of residential study will be compulsory in each year of the Course.

Admission to Student Membership:

The minimum standard is 3 G.C.E. 'O' levels plus 2 'A' levels, or an equivalent academic qualification. In exceptional cases an applicant who does not fulfil the minimum academic qualifications laid down by the Institute/or Student Membership may be accepted. In such cases the individual must either:

(a) have maturity and experience in management above supervisory level, or

(b) be already engaged in personnel work or in work closely associated with personnel management and have clearly demonstrated in his career the ability to cope with the level of the course.

Such applicants may be required to attend an interview.

The minimum age for entry to student membership is 19 years.

Department of Mathematics and Computer Studies

Head of Department: A. M. Short, BSc, PhD, MinstMC, FInstP

The Department of Mathematics and Computer Studies

The Department has spacious modern laboratories fully equipped to deal with all relevant methods of numerical mathematics, statistical experimentation and practical work in the basic logic of computer design and analogue computing.

The work of the Department is in three major fields of study: (a) mathematics, (b) computing and data processing, and (c) statistics and operational research. The continuous development of advanced courses in each is planned, providing main study areas for some students and related studies for those whose chief interests are in other disciplines. Special courses in computing techniques and their various applications are arranged as required, usually in the evenings.

The Department maintains close links with industry, with other institutions and with schools. Regular meetings of the Lancashire and North Western Branch of the Institute of Mathematics and its Applications and of the Preston Branch of the British Computer Society are held in the Polytechnic. Non-members of these bodies are welcome to attend their lecture meetings. Not infrequently their topics are of general interest to the layman.

Higher National Certificate in Mathematics, Statistics and Computing (III) (DES3144)

Course Adviser: Mr J. S. Moorman

A two-year course for those whose work in Industry or Commerce has a mathematical foundation. The curricula of the 1st and 2nd years are studied in alternate sessions. In the session 1975/76 the 2nd year curriculum will be covered. The treatment is such as to ensure that the students can apply their knowledge of mathematics with understanding to problems which they meet in their employment. A significant part of the course work will be concerned with an introduction to programming an automatic digital computer and students will be expected to write successfully a number of simple programs. The Institute of Mathematics and its Applications will accept the Higher National Certificate as giving exemption from some of its professional examinations.

Qualifications for entry: an Ordinary National Certificate in Sciences with passes in basic mathematics and elective mathematics; *or* G.C.E. 'A' level in mathematics together with three other subjects at G.C.E. 'O' level; *or* a qualification deemed by the Joint Committee to be equivalent to either of the above, e.g. an Ordinary National Certificate or Diploma with sufficiently good passes on a suitable syllabus in mathematics.

1st Year. *Tutor:* Mr J. D. Rimmer. *Curriculum:* mathematics: algebra, vectors and matrices, dynamics; numerical analysis: iterative methods, sets of linear equations, matrices; automatic computations: number systems and codes, Boolean algebra and logic, basic ideas of programming, a high level language; general studies.

Attendance: one day and one evening per week

Examinations: internal, externally assessed

2nd Year. *Tutor:* Mr J. D. Rimmer. *Curriculum:* mathematics: functions of a real variable, convergence, ordinary differential equations, functions of a complex variable, Fourier series, Laplace's equation; numerical analysis: interpolation, numerical differentiation and integration, numerical solution of ordinary differential equations; probability and statistics: theory of probability, descriptive statistics, confidence limits, tests of significance, control charts and their use; general studies

Attendance: one day and one evening per week

Examinations: internal in mathematics, numerical analysis: externally assessed in statistics

Qualification: Higher National Certificate in Mathematics, Statistics and Computing

Licentiateship of the Institute of Mathematics and its Applications (IIINP) (DES3692)

Course Adviser: Mr J. S. Moorman

A one-year course for those who have obtained a Higher National Certificate in Mathematics, Statistics and Computing.

Curriculum: mathematical techniques of operational research, numerical methods and a high level computing language

Attendance: one day per week

Examinations: internal, externally assessed

Qualification: the academic requirements for the qualification of Licentiateship of the Institute of Mathematics and its Applications

Institute of Statisticians Courses (DES2124/5)

Course Adviser: Mr L. R. Peace

Courses will be provided for all stages of the Institute's examinations including the Preliminary Examination.

Qualifications for entry: G.C.E. 'O' levels in mathematics and in English language are necessary qualifications for entry to the Institute's courses.

Candidates requiring further details about entry and enrolment should write to the course adviser.

Higher National Certificate in Mathematics, Statistics and Computing (III) (DES3144)

Course Adviser: Mr J. S. Moorman

A two-year course for mature students whose work or interests make greater mathematical demands than their previous training can support. The treatment of the work is such as to ensure that the students can apply their knowledge of mathematics to real-life problems. A significant part of the course work will be concerned with an introduction to programming an automatic digital computer and students will be expected to write successfully a number of simple programs. The Institute of Mathematics and its Applications will accept the Higher National Certificate as giving exemption from some of its professional examinations.

Qualifications for entry: G.C.E. 'A' level in mathematics together with three other subjects at G.C.E. 'O' level, *or* a qualification deemed by the Joint Committee to be of the same standard, *e.g.* an O.N.C. with sufficiently good passes on a suitable course in mathematics. Students may not enter this course until they have reached the age of twenty-one years.

1st Year. *Tutor:* Mr G. J. Blackledge. *Curriculum:* mathematics; functions of a real variable, ordinary differential equations, functions of a complex variable, partial differential equations, Fourier series; numerical analysis: solution of differential equations, interpolation, numerical differentiation and integration; automatic computation.

Attendance: two evenings per week

Examinations: internal, with automatic computation paper assessed

2nd Year. *Tutor:* Mr J. B. Wignall. *Curriculum:* mathematics: algebra, vectors and matrices, analytical geometry; numerical analysis: iterative methods, solutions of sets of linear equations, matrices; statistics: probability theory, descriptive statistics, confidence limits, tests of significance, quality control.

Attendance: two evenings per week

Examinations: internal, externally assessed

Qualification: Higher National Certificate in Mathematics, Statistics and Computing

Licentiateship of the Institute of Mathematics and its Applications (IIINP) (DES3692)

Course Adviser: Mr J. S. Moorman

A two-year course for those who have obtained a Higher National Certificate in Mathematics, Statistics and Computing.

Curriculum: mathematical techniques of operational research, numerical methods and a high level computing language.

Examinations: internal, externally assessed.

Qualification: the academic requirements for the qualification of Licentiateship of the Institute of Mathematics and its Applications.

British Computer Society, Part I (III) (DES3861)

Course Adviser: Mr W. D. Nash

A five-term course for students employed in the computing industry who wish to embark on a course of study leading to the professional qualifications of the British Computer Society. Details of the Part II study requirements can be obtained from the course adviser.

Qualifications for entry: G.C.E. 'O' level in five subjects, two of which must be mathematics and English language. Candidates for the Part I examination must enrol as Student Members of the British Computer Society.

Curriculum: the General Section on computing knowledge, plus two options selected from: Option B; programming; Option C: data processing; Option D: analysis and design of information processing systems; Option F: analogue and hybrid techniques.

Attendance: two evenings per week

Examinations: these are held annually in April and consist of two compulsory papers covering the General Section of the syllabus, and two papers in each of the selected options

Qualification: Part I Examination of the British Computer Society

Data Processing for Computer Users (IIINP) (DES7465)

Course Adviser: Mr W. D. Nash

This two-year course of evening study and related examinations is intended as a supplementary qualification for people requiring a formal computer education to a greater depth than an appreciation course, even though they do not intend to become practising programmers or systems analysts. Such personnel will normally be working closely in conjunction with a computer, at the intermediate level of management, and will already have reached or be approaching a recognised standard of qualification in their own profession.

Qualifications for entry: students should be at least 20 years of age and have obtained one of the following qualifications, or the equivalent:

(a) an appropriate commercial qualification of intermediate professional standard,

(b) an Ordinary National Certificate in an appropriate subject,

(c) a Technicians Certificate in an appropriate subject.

Those who do not hold one of the above qualifications, but who have attained a sufficient standard through extended experience or academic study such that they can benefit from the course, may be admitted at the discretion of the Director.

1st Year. *Curriculum:* data processing fundamentals, computer programming.

Attendance: one evening per week.

2nd Year. *Curriculum:* data processing for industry, commerce and public administration, data processing for management.

Attendance: one evening per week.

Examinations: C.G.L.I. 748.

Qualification: City and Guilds of London Institute's Certificate in Data Processing for Computer Users.

Introduction to the Open University Mathematics Foundation Course (IV) (DES8081)

Course Adviser: Mr G. J. Blackledge

A course of ten lectures on Thursday evenings commencing on the 9th October, 1975, primarily designed for students who have enrolled for the Open University M100 course starting in January 1976, but of interest to anyone considering studying the M100 course or mathematics courses at degree level.

The course will provide guidance and information to students on the study of mathematics with the Open University. It will include revision of some basic techniques and an introduction to topics such as sets, mappings, functions, etc., with particular emphasis on language and notation.

Polytechnic Mathematics Preliminary Course (IV) (DES8083)

Course Adviser: Mr G. J. Blackledge

A one-year course for mature students covering preparatory material for entry to a degree course in mathematics. The course is run on a national basis and there are no formal entry requirements.

Attendance: two evenings per week.

Examinations: continuous assessment.

Qualification: satisfactory completion of the course will be accepted as satisfying the entry requirements to C.N.A.A. degree and honours degree courses in mathematics.

Department of Mechanical and Production Engineering

Head of Department: D. M. Clapp, BSc (Eng), PhD, CEng, MICE, FIMechE

The Department of Mechanical and Production Engineering

The Department sees its responsibility to the community as lying in three main areas—the provision of education in the mechanical and production engineering fields for school leavers and students already in employment, the provision of specialist service facilities to industry, and research and development.

A number of advanced courses are offered which normally lead to technician qualifications; however facilities do exist for transfer from these courses to engineering diploma and degree courses depending upon student performance.

Special courses of varying length are arranged to meet the requirements of local industry. Departmental laboratories house equipment suitable for test and development work in connection with materials testing, stress analysis, fluid mechanics, applied thermodynamics, control and vibration, metrology and machine tool technology. These facilities are offered to industrial organisations and have in the past contributed usefully to the solution of their technical problems. Collaboration with industry is welcomed. The Department is a member of the Department of Trade and Industry's 'Interlab' scheme.

There is an active interest in applied research and many staff are involved in projects for local industry and, in collaboration with universities or the Council for National Academic Awards, for the award of higher degrees. Much of this work lies in the field of production engineering.

Graduate Course in Design and Manufacture (III) (DES8073)

Course Adviser: Mr J. R. Smith

A twelve-week full-time course is offered to provide graduates, of various disciplines, who have little or no practical training with an accelerated appreciation course of many of the areas of design and production practice. The course meets the recommendations of the Engineering Industry Training Board in their booklet No. 5 'The Training of Professional Engineers'', and provides part of the graduate experience necessary for Corporate membership of the Institutions of Mechanical and Production Engineers.

A project design and manufacture forms an important part of the course since it provides an opportunity for the graduate to apply the knowledge gained, in supporting academic study, of design and manufacturing processes to a 'real' situation and to experience many of the pressures of the industrial environment.

The course will be offered both in the Autumn and Spring terms. Further details may be obtained from the Head of Department.

Qualifications for entry: A student must have an academic background equivalent to that required by the Professional Institutions for Graduate membership (normally a degree of a University or Polytechnic) and, (i) be seeking a career in an engineering industry, (ii) be sponsored by his employer. Employers sponsoring students may be eligible for E.I.T.B. grants, as part of a recognised training scheme.

TECHNICIAN COURSES

The Engineering Technician: an engineering technician is one who can apply in a responsible manner proven techniques which are commonly understood by those who are expert in a branch of engineering. He may be required to supervise the work of skilled craftsmen, and must be competent to take responsibility for the operation and maintenance of expensive engineering plant or services. He may be engaged in the design, development, erection, commissioning and service of equipment, on the testing of materials, or on costing and estimating. His work demands both knowledge and acquired experience, and his education must be such that he understands both the reasons for and the purpose of the operation for which he is responsible.

Although his qualifications and experience are not sufficient to enable him to achieve election as a Chartered Engineer, the courses of study normally pursued will enable him to seek membership of (for example) the Society of Engineers or the Institution of General Technician Engineers. In certain cases he may be elected into a non-corporate grade (e.g. Associateship) of one of the professional institutions. Advice on this should be sought from the Head of Department or Course Advisers.

Courses leading to Technicians' qualifications: the courses detailed on the following pages lead to Technicians' Certificates of the City and Guilds of London Institute, or Higher National Certificates awarded jointly by the Professional Institutions and the Department of Education and Science. There is opportunity for transfer from course to course at appropriate stages and some courses, e.g. the Mechanical Engineering Technicians' Certificate, provide an entry qualification to Diploma courses.

Higher National Certificate in Engineering (III) (DES1077)

Course Adviser: Mr K. Bennett

For convenience the subject matter is divided between the two years, but there is no intermediate qualifying examination as such. Continuous assessment will occur throughout the course. Students finding difficulty with the course during the first year may transfer to one more suited to their needs. Arrangements are made to ensure that students are aware of their progress, and the Course Tutor will advise those who appear likely to profit from a transfer.

Qualifications for entry: an O.N.C. in engineering with applied mechanics, mathematics, and workshop technology. Exceptionally, a student holding a C.G.L.I. Final Certificate of the Mechanical Engineering Technicians' course may enter the first year. Others must take a one-year preliminary course.

1st Year. *Tutor:* Mr J. E. Meadows. *Curriculum:* mathematics, general studies, mechanical technology, engineering measurements, properties and forming of materials

Examinations: continuous assessment

2nd Year. *Tutor:* Mr F. McIntyre. *Curriculum:* mechanical technology, engineering communications, manufacturing technology, properties of materials, together with one elective subject taken from power plants, dynamics, engineering design, designing for production, methods engineering and quality engineering.

Examinations: internal, externally assessed.

Qualification: the Higher National Certificate in Engineering.

Higher National Certificate in Engineering, Endorsement Subjects (III) (DES8072)

Tutor: Mr K. Bennett. *Curriculum:* subjects selected from those not taken in the second year together with any of the following: engineering management, technical foreign language, engineering work study, advanced engineering design, materials technology, computer studies, electronics for mechanical engineering technicians (subject to sufficient demand).

In addition Airframe Technology is available as an endorsement subject, inconjunction with the Blackpool College of Art and Technology.

Examinations: internal, externally assessed.

Qualification: endorsement to Higher National Certificate in Engineering.

Evening only courses for Higher National Certificate in Engineering

The Department does not offer any evening-only courses leading to the Higher National Certificate in Engineering. A clearing house will be in operation in the region in respect of enrolments in these courses for the 1975-76 session and intending students are advised *either* to consult the Head of Department, who will be able to advise concerning the centres at which they are available, *or* to apply to the Secretary, North Western Regional Advisory Council for Further Education, 36 Granby Row, Manchester M1 7AT (Tel: 061-228 1033) for information.

Mechanical Engineering Technicians' Part II and III Certificate C.G.L.I. 255

Course Adviser: Mr J. E. Meadows

A three-year part-time day course, following Part I and offering a choice of the following options: (i) a Drawing/Design Office bias, (ii) a Production Technician bias or (iii) a Test and Development Technician bias. The third year (Part III) enables the student to pursue specialist subjects to greater depth. A Part II Certificate is awarded by C.G.L.I. at the end of the second year, and a Full Technological Certificate by C.G.L.I. following success in the third year of study.

Qualifications for entry: students will normally be admitted to the Part II course after having successfully completed Part I of the course.

Part II, Drawing/Design Group (DES7171)

1st Year (IV). *Tutor:* Mr G. Podmore. *Curriculum:* engineering drawing, engineering science, mathematics, materials and processes, general studies.

Examinations: internal.

2nd Year (IIINP). *Tutor:* Mr G. Podmore. *Curriculum:* mechanical engineering drawing, engineering science, mathematics, general studies

Examinations: C.G.L.I. 255

Qualification: City and Guilds of London Institute's Part II Certificate

Part II, Production Group (DES7171)

1st Year (IV). *Tutor:* Mr A. Dickson. *Curriculum:* workshop techniques, materials and construction, mathematics, engineering science, general studies

Examinations: internal

2nd Year (IIINP). *Tutor:* Mr A. Dickson. *Curriculum:* workshop technology, engineering construction and materials, engineering science, mathematics, general studies

Examinations: C.G.L.I. 255

Qualification: City and Guilds of London Institute's Part II Certificate

Part II, Test and Development Group (DES7171)

1st Year (IV). *Tutor:* Mr J. E. Meadows. *Curriculum:* testing and development technology, materials and construction, engineering science, mathematics, general studies

Examinations: internal

2nd Year (IIINP). *Tutor:* Mr J. E. Meadows. *Curriculum:* testing and development technology, engineering science, mathematics, general studies

Examinations: C.G.L.I. 255

Qualification: City and Guilds of London Institute's Part II Certificate

Part III (IIINP) (DES7172)

Tutors: Mr A. Dickson, Mr J. E. Meadows and Mr G. Podmore.
Curriculum: applied technology and either product design, engineering production, jig and tool design or research and development

Examinations: C.G.L.I. 255, except for research and development which is internal, externally assessed

Qualification: academic requirements for the City and Guilds of London Institute's Full Technological Certificate

Aeronautical Engineering Technician Part II Certificate CGL1 258
(DES7178)

Mechanical Option*

Course Leader: Mr A. Murray

A two-year course for technicians engaged in the manufacture and maintenance of aircraft to be offered at the Polytechnic for the first time in 1975/76 and providing specialisation in either the mechanical or avionic branches of aeronautical engineering.

Qualifications for entry: students will normally be admitted to the course after having successfully completed Part I of the course for Aeronautical Engineering Technicians or having maturity and experience in aeronautical engineering justifying an ability to complete the course successfully.

Part II (DES7178)

1st Year (IV). *Curriculum:* mathematics, aeronautical engineering science, aircraft engineering practice, general studies and aircraft production.

Attendance: one day and one evening per week

Examinations: 1st year internal. 2nd year: C.G.L.I.258

Qualifications: City and Guilds of London Institute's Part II Certificate

* Details of the Avionics option are given on page 42 in the section devoted to courses offered by the Electrical and Electronic Engineering subject area.

Department of Physics

Head of Department: A. M. Short, BSc, PhD, MInstMC, FInstP

The Department of Physics

The Department aims to provide an environment in which the individual talents and interests of students can prosper, and there is thus a bias towards flexible course structures which allow for inter-disciplinary as well as single subject studies.

The Department provides advanced full-time and sandwich courses, including degree courses in physics and astronomy, the Graduateship of the Institute of Physics and the Higher National Diploma in Physics. Each full-time and sandwich course student has two tutors; one to provide guidance on academic matters, the other to offer help and guidance of a personal nature.

A wide range of intermediate and advanced part-time courses is also offered including the B.Sc. in Physics and the Higher National Certificate in Applied Physics. Part-time studies in the Department offer the advantage of study in an environment which can only be provided in an institution having a wide range of full-time courses and the consequent high calibre of staff and generous provision of equipment.

Able graduates are encouraged to undertake postgraduate research directed at higher degrees with one of the departmental research teams and the Department is able to offer a limited number of research studentships for this purpose. Research activities receive external support and the volume of this support is increasing.

Close links are maintained with industry and regular meetings of professional bodies are held in the Department, including meetings of the Lancaster branch of the Institute of Physics and the North Lancashire Physics Teachers Centre.

The Department houses a wide range of items of advanced teaching and research equipment including an electron microscope, general electronic equipment, spectrographs, measuring devices, photographic and radiographic equipment, cryostats, high vacuum equipment, acoustic devices, ultrasonic and non-destructive testing equipment and microwave apparatus. Collaboration with industry is welcomed and subject to availability the equipment may be used by qualified technologists. Training courses on special techniques will be given as required.

Meteorological records started in Preston in 1876.

The Polytechnic facilities for Astronomy and Meteorology include a meteorological station and two observatories. Facilities available to students include a 20cm refractor, an 8cm reversible transit instrument, and a 39cm astrograph. There is a wide range of supporting equipment.

PART-TIME COURSES

Bachelor of Science Degree (B.Sc.) in Physics of the Council for National Academic Awards (II) (DES4128)

Course Adviser: Mr R. J. Trebilcock

A four-year course leading to the B.Sc. degree in Physics. The course is designed to meet the needs of two main groups of students.

(a) Non-graduate teachers of Physics and Electrical subjects in schools and colleges of Further Education

(b) Persons employed in the Physics and Light Electrical sectors of local industry

To accommodate the varying requirements of the above two categories the degree is organised on a *credit* basis. In consultation with members of the Polytechnic staff, students will choose a suitable programme of work from the list of *credits* given below.

The normal course extends over four years but exemption from certain *credits* can be granted so that the time spent on the course is reduced.

Qualifications for entry: The course is primarily designed for mature students who would normally be at least 20 years of age. A wide range of entry qualifications can be considered, examples of which include:

(a) O.N.C. in Science and Engineering

(b) G.C.E. 'A' level subjects including Mathematics or Physics

(c) A Teachers' Certificate from a College of Education

(d) H.N.C. or H.N.D. in Applied Physics or Engineering

Students with other qualifications, including passes in Open University Foundation Courses, are invited to discuss their suitability for entry to the course.

Attendance: it is proposed to offer two patterns of attendance:

(a) one full day and one evening per week

(b) one afternoon and two evenings per week

Other patterns could be considered if there is sufficient demand.

Credits: A student taking the degree over four years would study a total of 16 *credits* and associated practical work. The following *credits* are offered:

1st Year; general physics I, thermal physics I, electricity and magnetism, mathematics I.

2nd Year; general physics II, electronics I, modern physics and solid state physics, mathematics II.

3rd Year; electronics II and electromagnetic theory, physical optics and wave mechanics, electric and magnetic properties of materials, thermal physics II, mathematics III.

4th Year; semiconductors physics and structure of materials, low temperature techniques and nuclear physics, plus two of the following: electronic systems, advanced optics and acoustics, physical techniques for materials structure investigation, spectroscopy, relativity and astrophysics.

Examination: internal with external assessment.

Qualifications: Bachelor of Science degree awarded by the Council for National Academic Awards.

Higher National Certificate in Applied Physics (III) (DES1072)

Course Adviser: Dr D. R. Peck

A two-year course which is physics based but not physics dominated. The aim of the course is to train technologists who can support the work of graduate engineers and scientists in industry. The course is also a first stage of a part-time route to full graduate qualification, with corporate membership of the Institute of Physics. Many Universities offer direct entry to the second year of their degree courses to candidates with a good H.N.C. in Applied Physics. Suitable post H.N.C. studies can also lead to membership of professional bodies such as the Institute of Measurement and Control and the recently formed Institute of Nuclear Engineering.

Qualifications for entry to the first year of the course:

1. Applicants must have studied both physics and mathematics to G.C.E. Advanced level standard and passed in one of these subjects. In some instances students who are admitted with a single 'A' level pass may have to undertake supplementary studies in either physics or mathematics and sit an examination at the end of their first term in Polytechnic, or
2. An Ordinary National Certificate in Sciences with passes in the following subjects: (a) basic physics, basic mathematics and elective physics; or (b) basic physics with a mark of at least 50%, basic mathematics and elective, mathematics; or (c) basic physics, basic mathematics and a subject comprising approved sections of the elective physics and elective mathematics syllabuses, or
3. An Ordinary National Diploma in Sciences, normally including passes in major physics and minor mathematics, or
4. An Ordinary National Certificate in Applied Physics, or
5. An Ordinary National Certificate in Engineering with credits in Physics II and electrical engineering 'A' and passes in mathematics and one other subject, or
6. A qualification deemed by the Physics Joint Committee to be equivalent to any of the above.

1st Year. *Tutor:* Dr D. R. Peck. *Curriculum:* physics: elasticity, rotational motion, kinetic theory, thermal conductivity, a.c. theory; mathematics: integration, differentiation, complex numbers, Laplace transforms; applied physics: electronics I, physical testing I; general studies.

Attendance: all day Monday and Monday evening.

Examinations: internal.

2nd Year. *Tutor:* Dr D. R. Peck. *Curriculum:* physics: thermodynamics, physical optics, a.c. bridges, surface tension, viscosity, acoustics; mathematics: co-ordinate geometry, determinants, matrices, Fourier analysis; applied physics: electronics 2, physical testing 2; general studies.

Attendance: all day Monday and Monday evening.

Examinations: internal, externally assessed.

Qualification: Higher National Certificate in Applied Physics.

Associateship of the Institute of Physics (III) (DES3022)

Course Adviser: Dr D. R. Peck

A one or two-year part-time course for endorsements to the Higher National Certificate in Applied Physics. Success in the examinations of three endorsement subjects qualifies a student for admission to the Associateship of the Institute of Physics.

Qualifications for entry: a Higher National Certificate in Applied Physics.

Curriculum: further electronics, nuclear physics, spectroscopy, instrumentation and a project.

Attendance: one day and one evening per week (Tuesday or Wednesday).

Examinations: internal, externally assessed.

Qualification: Associateship of the Institute of Physics.

Graduateship of the Institute of Physics (II) (DES2147)

Course Adviser: Dr E. Webster

A two-year part-time course for students with qualifications in science or engineering. The aim of the course is to secure corporate membership of the Institute of Physics for physicists with intermediate qualifications and also for engineers and scientists who aspire to senior positions and need to have professional membership of one or more corporate bodies. The course includes a study in depth of some aspects of physics. The study may be in either a branch of pure physics such as nuclear physics, or in an applied subject such as acoustics or non-destructive testing.

Qualifications for entry: The Associateship of the Institute of Physics or a qualification deemed by the Physics Joint Committee to be equivalent. Examples of such equivalents are:

1. The H.N.D. in Applied Physics including a pass in mathematics
2. The H.N.D. in Electrical Engineering when obtained at the Malvern College of Electronics
3. The H.N.C. in Applied Physics with an approved group of supplementary subjects
4. The H.N.C. in Applied Physics which has been adjudged as being of sufficiently high all round standard, and followed by a further year of approved study
5. A degree in physics at ordinary or pass level*
6. Degrees in Materials Science, Physical Metallurgy, Physical Electronics, Electrical Engineering, Chemical Physics, Theoretical Physics and Mathematical Science*
7. Candidates who have recently been unsuccessful in the final examinations of an honours degree course in physics at a U.K. university. Such candidates should apply direct to the Institute of Physics for details of procedure.

* Applicants who wish to enter the course under sections 5 and 6 should write to the Head of the Department of Physics giving full details of their qualifications and of courses which they have undertaken.

Curriculum: physics, thermodynamics, optics, solid state physics, electromagnetism, high energy radiations or applied acoustics.

Attendance: all day Tuesday, and Tuesday and Wednesday evenings.

Examinations: Graduateship of the Institute of Physics.

Qualification: Associate Membership of the Institute of Physics.

Department of Social Studies

Head of Department: M. North, MSc(Econ)PhD

The Department of Social Studies

Courses in the arts and social sciences are conducted in this Department, and include degree, diploma and certificate courses in Sociology, Social Studies, Applied Social Studies, Social Work and Health Visiting. At the present time the bulk of the work is carried out in Robin House, a five-storey block adjacent to the main campus, in which are to be found general and specially equipped lecture and tutorial rooms, study rooms, a common-room with coffee bar, and academic and secretarial staffrooms. The Department will be moving in September, 1975, to new and larger premises a few minutes walk from the main campus in Heatley Street.

Many of the courses offered at present lead to professional status, and consequently students spend an appreciable amount of time in practical work placements in Social Work Agencies, Schools, Social Service Departments, etc. Strong links have been forged with Education and Social Service Authorities and Training Officers in industry and commerce, who together seek places on our courses for their staff and provide career opportunities for many of our students. Staff of the Department carry out research projects which are closely linked with the teaching undertaken by staff, which is of benefit both to students on our courses and local industrial, commercial and social enterprises.

Health Visitor's Certificate (III) (DES3196)

Course Adviser: Miss M. M. Poyser

A two-year part-time course involving parts of three days per week of combined theoretical and practical training leading to the award of a Certificate in Health Visiting by the Council for Training of Health Visitors.

Qualifications for entry: candidates must be State Registered Nurses with approved midwifery experience and possess in addition (a) five G.C.E. subjects at 'O' level, or (b) other approved educational qualifications, or (c) satisfy the Council as to their educational fitness for the course by means of an Entrance Test.

Examinations: divided between the two years internal, externally assessed, and a written project. Periodic assessment is maintained throughout the course.

Qualification: the Health Visitor's Certificate.

Unqualified Social Workers: In-Service Course (IV): **Phase I** (DES4756) **and Phase II** (DES4757)

Course Adviser: Mr B. Gray

The social services today are manned to a significant extent by experienced, long serving but unqualified staff. While two-year full-time training has hitherto been the normal minimum requirement for professional qualifications, this scheme will take into account the experience and maturity of this particular group and the work they have already undertaken. It is devised to offer them in the first instance a two-phased plan of study on a day-release basis without selection or assessment.

Its purpose is to give them the opportunity to use their experience more effectively and to develop their abilities further.

Each phase is complete in itself and a certificate of attendance will be awarded in respect of each. Students completing Phase I and Phase II will be eligible to apply for admission to Phase III, a one-year course leading to the Certificate of Qualification in Social Work awarded by the Central Council for Education and Training in Social Work. Admission to Phase III is not guaranteed and applicants will be required to submit themselves to the normal selection procedures of the Polytechnics or Colleges offering Phase III courses.

Qualifications for entry: applicants must be over 35 years of age and with at least five years' relevant experience.

Curriculum: studies will be devised to broaden and deepen the student's perception of the client's need and his ability to help within the structure of the agency. The student will learn something of developments in the study of social administration and the effects of social policy on social work. He will gain some appreciation of the various social work methods and an understanding of the nature of organisations.

Attendance: one day per week for the session, preceded by a two-day residential course

Fees: £17.00 (approximate) per session each Phase, including the cost of the two-day residential course

Physical Recreation Section

Indoor facilities

The Recreation Hall is equipped with fixed apparatus which, together with portable apparatus and equipment the Polytechnic possesses, allows the pursuit of the following activities: athletics, badminton, basket ball, canoeing and sailing, cricket, dance, fencing, five-a-side football, golf, judo, mountaineering, netball, olympic gymnastics, padder tennis, soccer and rugby training, table tennis, trampolining, volley ball, weight training and lifting. Swimming classes are held at Saul Street baths. The recreational facilities of the Polytechnic are available to all students enrolled into an academic course without payment of a further fee. Persons interested in any of the activities detailed should contact the senior Lecturer in Physical Recreation at enrolment or as soon as possible afterwards. Polytechnic sports clubs, affiliated to the Students' Union, are given priority in the evenings.

Lectures and films on a variety of activities, and inter-departmental and inter-Polytechnic tournaments and competitions, are arranged throughout the session.

Study of Skilled Movement

The section is interested in the development of studies in human movement. In conjunction with the photographic section of the School of Art and Design specialised photographic techniques have been employed in the study of movement.
Lecturers in the Section are co-operating with staff of the Mechanical Engineering Department of the Polytechnic in a number of tests of human performance.

Outdoor pursuits

The mountaineering club arranges visits to the Lake District and North Wales for rock climbing, rambling and canoeing. For full-time students one-week courses in mountain activities are arranged, which include fell walking, canoeing, sailing, rock climbing, orienteering and pony trekking. From time to time arrangements are made for parties to engage in outdoor expeditions during vacation periods. Students are warned against undertaking such activities without proper equipment and leadership.

Regional and National Sports Activities

The Polytechnic is a centre for regional and national sports tournaments in badminton, table tennis, trampolining, judo and basketball. Coaching in Olympic Gymnastics is available and specialised classes are held to prepare young gymnasts for National and International Competitions.

Scheduled Classes

The activities detailed above are primarily intended for students enrolled into one of the Polytechnic's academic departments. Persons not registered as students for academic courses may be admitted to certain scheduled classes in physical education, so far as places are available. A tuition fee is payable.

In order to give academic course students priority, persons who wish to enrol for physical education classes alone are not accepted until the fourth week in the session.

Full-time and Sandwich Courses

The Polytechnic offers a variety of courses which are listed below. Details are contained in a full-time and sandwich course prospectus which may be obtained by writing to the Educational Liaison Officer.

Accountancy, Professional and Secretarial

B.A. (C.N.A.A.) in Law
B.A. (C.N.A.A.) in Business Studies (Sandwich)
Higher National Diploma in Business Studies (Sandwich)
Higher National Diploma in Business Studies (Full-time)
Accountancy Foundation Course for I.C.A., C.I.P.F.A., A.C.A., I.C.M.A.

Art and Design

B.A. (C.N.A.A.) in Fashion (Sandwich)
B.A. (C.N.A.A.) in Fine Art
B.A. (C.N.A.A.) in Graphic Design (Sandwich)
Foundation Course in Art and Design

Construction

Corporate Membership of the Institute of Building, Final Examination Part II
Higher National Diploma in Building (Sandwich)

Engineering

B.Sc. (C.N.A.A.) in Electrical and Electronic Engineering)Sandwich)
Polytechnic Diploma/Associate Membership of the Institution of Electrical Engineers and/or Graduate Membership of the Institution of Electronic and Radio Engineers
B.Sc. (C.N.A.A.) in Mechanical Engineering (Sandwich)
Polytechnic Diploma in Mechanical Engineering (Sandwich)
Polytechnic Diploma in Mechanical Engineering (Industrial Design) (Sandwich)
Polytechnic Diploma in Production Engineering (Sandwich)
Council of Engineering Institutions Part 2 Examinations

Languages

R.S.A. Diploma for Bilingual Secretaries and/or Personal Assistants (post-grad.)
R.S.A. Certificate for Bilingual Secretaries and Diploma for Personal Assistants

Management

Diploma in Management Studies (D.M.S.)

Psychology

B.A. (C.N.A.A.) in Psychology

Sciences

B.Sc. (Sciences) of the University of London (Astronomy, Biochemistry, Chemistry, Physics, Biology, Physiology).
Higher National Diploma in Chemistry (Sandwich)
Higher National Diploma in Physics (Sandwich)
Graduate Membership of the Royal Institute of Chemistry
Graduate Membership of the Institute of Physics

Social Work

Polytechnic Diploma in Applied Social Studies (post-grad.)
Polytechnic Diploma in Social Work
Health Visitor's Certificate
Unqualified Social Workers: In-service Course (Phase III)

Teaching of the Mentally Handicapped

Teacher's Certificate of the University of Lancaster

Polytechnic Calendar

1975

ENROLMENT PERIOD

Monday, 15th September Tuesday, 16th September	Afternoons and evenings only

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Autumn Term (13 weeks)

Monday, 22nd September	Autumn term commences
Friday, 19th December	All Departments close for Christmas after evening classes

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1976

Spring Term (12 weeks)

Monday, 12th January	Spring term commences
Friday, 2nd April	All Departments close for Easter after evening classes

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Summer Term (10 weeks)

Monday, 26th April	Summer term commences
Friday, 28th May	All Departments close for the Spring Holiday after evening classes
Monday, 7th June	All Departments re-open
Friday, 9th July	All classes close: end of session

Discipline

Students are accepted into Polytechnic courses on the understanding that they abide by the regulations herein and from time to time in force.

The Director has the authority to suspend students from attendance for any cause which he considers adequate. The Council will exclude from the Polytechnic premises any student whose continued attendance is undesirable. Suspended or excluded students automatically lose membership of the Students' Union and Polytechnic societies.

Students are required to attend classes punctually and regularly, to carry out satisfactorily such work as is set by their tutors, and to sit the prescribed examinations. There are minimum requirements in all courses in respect of attendance, coursework, laboratory work and project work (where appropriate), and examinations, and the right to continue a course of study depends on the maintenance of satisfactory attendance and academic performance. The requirements in Higher National Certificate courses are detailed in full on page 81 ; those in other courses may be obtained from Heads of Departments.

In some courses there is a requirement to undertake one or more periods of practical training in industry, commerce or the professions, and progress in the course will depend upon the receipt of a satisfactory report on the standard of work achieved by the student whilst in a practical placement.

Students must conduct themselves in a quiet and orderly manner. They will be held responsible for and required to make good any damage they may cause due to negligence or wilfulness. They are expected at all times to keep the Polytechnic tidy and free from litter and to preserve the furnishings and decorations.

To reduce fire risk and avoid general discomfort students must obey the notices prohibiting smoking in specified areas of the Polytechnic. Heads of Departments have authority to restrict smoking within any other part of the accommodation over which they have control.

Hot cooked foods must not be brought into the Polytechnic, and food must not be consumed on the premises other than in the dining room and coffee lounge. Students who wish to bring packed meals may do so but they should eat such meals in the coffee lounge.

All forms of gambling and card playing for money on the premises or within the precincts are prohibited. Musical instruments, including transistor radios, must not be played on the Polytechnic premises except by arrangement with the Director.

Absence because of illness, etc.

In the case of absence through illness, or other unavoidable cause, the student should inform his or her Head of Department immediately in writing. Failure to do this may result in it being assumed that the student has left the course, and the name of any student who is absent for a continuous period of four weeks without approval will be

removed from the register. When an infectious illness occurs in a house or lodgings in which the student resides immediate notification should be sent also to the Student Counsellor. Such students must not attend the Polytechnic until a medical cetrificate is supplied stating that there is no risk of the infection being conveyed to others or until authorised to resume attendance by the Student Counsellor.

Changes of addresses and other student particulars

Changes in student particulars occurring during the session must be notified immediately to the Academic Registrar on the form available from the Polytechnic office, for example: change of home or lodgings address, change of employer, change of name on marriage.

Safety in Laboratories and Workshops

Students are required in the interests of cleanliness, health and safety to provide themselves with the recommended kind of protective clothing and footwear which must be worn in workshop and laboratory classes, and to use all protective devices provided. Workshop and laboratory clothes must not be worn whilst attending lectures or whilst in the communal block.

Safety considerations are not of course confined to Laboratories and Workshops and students must exercise constant care with the diverse situations in which they will find themselves. Proper care and diligence is essential, as is attention to any advice or instructions which may be given from time to time. Students involved in any accident, however slight, must complete an accident report form (obtainable in Departments) and return it to the Deputy Chief Adminstrative Officer.

Personal property

The Council cannot accept responsibility for the safety of students' property. Property found on the premises will be handed to the Custodian of Premises, and students wishing to reclaim lost property should address enquiries to the Custodian. The victims of theft should immediately report the circumstances personally to the police and to the Custodian of Premises or the Polytechnic office. The Polytechnic co-operates with the police in their enquiries.

Cloak lockers are available in all departments for students' use. Full-time, sandwich and block release course students may be allocated lockers for the duration of the course. Lockers should be secured by the students' own padlocks.

Lockers must be left empty and unlocked at the end of a course or session as otherwise the locks and contents will be removed.

Parking facilities

Education Authorities have no obligation to provide parking facilities and the Polytechnic does not possess adequate facilities to meet all demands. Parking is restricted to the official car parks and cycle sheds where vehicles may be left at the owners' risk.

Students must drive very slowly in the Polytechnic precincts. They must not drive around or within the Polytechnic premises in break periods. Roadway and delivery areas must be kept clear in case of emergencies. Please park compactly and with consideration for others.

Course Requirements and Admission to Courses

Courses will be provided subject to adequate enrolment and subject to the limits of available teaching accommodation and staff. They may be discontinued at the discretion of the Director at any time during the session should the number of students attending fall below a reasonable level.

The acceptance of a student into a course must have the approval of the appropriate Head of Department, and a student who wishes to enrol into a course demanding entry qualifications must produce documentary evidence that he possesses the necessary qualifications either at or before enrolment. If a potential student or his parents are doubtful about the best course of study to pursue for a particular career they should write in the first instance to the Educational Liaison Officer for advice.

Application procedure

Application to join a course should be made in person during the enrolment period.

National Certificate Course requirements

An Ordinary National Certificate is awarded at the end of a two-year 'Tuson' course of part-time study. A Higher National Certificate is awarded at the end of a further two-year part-time course of advanced study.

Awards in each case are made by a Joint Committee of the Department of Education and Science and one or more Professional Institutions. To receive an award a candidate must have complied with the rules of the appropriate Joint Committee which normally require that the candidate must:

(a) make not less than 67% of the possible attendances in each subject in each year of the course

(b) obtain not less than 40% of the possible marks in each subject in the examinations held at the end of each year

(c) obtain not less than 40% of the possible marks obtainable in each year for set work, class work, laboratory work, etc., taken separately in each subject for which such marks are to be awarded, and

(d) obtain not less than 50% of the grand total of marks obtainable in the final year. Of this total the possible marks in the examinations constitute 70% and the remaining 30% will be the possible marks for set work, class work, laboratory work, etc.

A 'Distinction' may be awarded to any candidate qualified to receive a certificate who, in the opinion of the examiners, has shown special merit in the final examination. His certificate will be specially noted with the name(s) of the subject(s) in which he has thus distinguished himself.

Tuition Fees

Tuition fees are payable at the beginning of each course and of each succeeding year of the course. Payment in full is due at or before enrolment; it is regretted that fees cannot be accepted in instalments. Cheques should be made payable to 'Lancashire County Council' and crossed. A refund of fee may be made in exceptional circumstances beyond the student's control and unforseen at the time of enrolment. Applications for refund should be made in writing to the Academic Registrar, accompanied by the student's receipted copy of his enrolment form.

The only students excused paying tuition fees at the time of enrolment are those whose employers undertake to pay the tuition fees on their behalf; they must produce at enrolment a letter from the employer to that effect. The student himself is responsible for payment of the fee if his employer refuses to accept responsibility. Fees are graded into three categories corresponding to the academic level of the course, and the grade of each course is shown in brackets after the course title or after the year of the course.

Course grades are:

Grade V: work of an introductory character.

Grade IV: work of an intermediate character.

Grade III: work of an advanced character leading, for example, to a Higher National Certificate.

Grade II: work for final professional qualifications and first degrees.

Grade I: work for further degrees such as the M.A.

Note to Local Authorities: The course grade designation IIINP indicates an advanced course which is not poolable undes D.E.S. regulations. In respect of these courses the normal recoupment prodecure will apply.

	Students under age 18 on 1st September £	Students age 18 and over on 1st September £
Block Release Courses		
Journalists: 1st year	0.75	10.00
2nd year	0.75	14.75
Chartered Institute of Public Finance and Accountancy		
Nov. 1975 exam. three week pre-examination course	0.75	6.00
Final: Part 1 or 2. May 1976 examination course	0.75	19.00
Nov. 1976 examination course	0.75	18.00
Institute of Chartered Accountants		
Final: Part 1	0.75	7.75
Professional Examination 1	0.75	7.00
Professional Examination 2	0.75	5.75
Part-time Day Courses		
Grade V	0.75	8.15
Grade IV	0.75	9.05
Grades III, II, I	0.75	13.25
Part-time Evening Courses		
Grade V	0.25	7.65
Grade IV	0.25	8.55
Grades III, II, I	0.25	12.75
Other Courses		
Unqualified Social Workers: Phase 1 or 2		17.00
Diploma in Management Studies for the Public Services		39.50
Introduction to Open University Maths.		3.25
Open University Technology Foundation Course		3.25
Design Appreciation for Graduates (a) 7 weeks	0.75	18.25
(b) 12 weeks	0.75	30.75
C.I.P.F.A. Graduate Conversion Course 1 term	0.75	44.00

N.B. These fees will be subject to review before the session starts in September, 1975.

Enrolment

Enrolment is valid for only one academic year at a time and will take place on the following days and during the times shown:

	afternoon	*evening*
Monday, 15th September	1.30 to 4.00	6.00 to 8.30
Tuesday, 16th September	1.30 to 4.00	6.00 to 8.30

Full-time and sandwich course students should enrol during the times and on the dates stated or during the first week of the course at times arranged by Heads of Departments. Postal enrolments cannot be accepted.

Permission Vouchers

Students wishing to enter courses graded IV and IIINP must produce permission vouchers each year and present them at enrolment. Students normally resident in the New Lancashire Area or those who can produce evidence of support from a grant-aiding authority are exempted from this requirement.

Application for a voucher must be made by the student to the Education Office of the Local Education Authority (the Metropolitan District in the case of Metropolitan Counties) in whose area he resides. Failure to produce the necessary voucher may result in a fairly heavy charge being made against the student concerned to cover the course costs normally payable by his Local Education Authority.

Enrolment procedure

Students should first report to the Department in which they wish to enrol. The rooms in which the enrolment takes place in each Department will be shown in the main entrance of the Polytechnic.

When details of future courses have been determined in the Department, students must present enrolment forms at the Hall (A Block) for enrolment and payment of fees.

Students will not be permitted to attend classes until they have completed the enrolment procedure. At enrolment each student will receive a copy of the enrolment form bearing an admission number. This form must be shown to the class lecturer when the student attends each class for the first time in the session.

Examinations

Entry to Examinations

All students are required to take prescribed internal or external examinations in each year of the course.

Examination fees must be paid by students at the time of entry to examinations. Accounts cannot be sent to grant-aiding authorities or employers but receipts are issued to students who may use them, if appropriate, when recovering their expenditure from their sponsoring bodies. There are no fees for purely internal examinations of the Polytechnic.

Students who take the examinations of external examining bodies (e.g. University of London, Council of Engineering Institutions) must pay the examination fees of these bodies as well as the local centre fee as appropriate. These are stated on the forms of entry or may be obtained on enquiry at the Polytechnic office.

Each student is responsible for his own entry to examinations. Students will not be informed individually of the last dates of entry or of timetables of examinations, but these will be published on notice boards.

Examination Results

Sessional Reports will include examination results, but they cannot be completed until after the results are received from external examining bodies. Reports are then sent to each student as soon as possible. It is regretted that in the meantime enquiries cannot be answered. Copies of external examination pass lists will be made available for scrutiny on the Polytechnic notice board as soon as possible after they are received.

Re-examinations

In the event of a Joint Committee or other examining body agreeing to the re-examination of a student in a subject, the student will be required to pay the full cost of the re-examination, or to share the cost proportionately should more than one student be involved in the same re-examination.

Communal Facilities

The Communal Block provides facilities for the educational, social and recreational enjoyment of the students and staff. Besides administrative accommodation and a fully equipped theatre for both lectures and drama, there is a dining room and coffee foyer, a bar, a students' common room and the Students' Union offices. The Library is situated in this building.

The Recreation Hall will be reserved at certain times for examinations, and occasionally for ceremonies or exhibitions, but at other times it is available to student groups, societies and individuals for games and a very wide variety of physical activities. The bridge over the north courtyard leading to the hall contains changing rooms and showers.

St. Peter's Church, acquired for use as a Polytechnic Community/Arts Centre is expected to open in September. It will provide facilities for a variety of activities including concerts, exhibitions, displays, debates, lectures, social activities and a chaplaincy centre.

Refectory

The dining room is open from 11.45am. to 1.30pm. for lunch. A selection of courses at various prices is available. Tea or coffee after lunch may be taken in the adjacent coffee foyer.

Light teas or cooked meals are normally available from 4.30 to 6.30pm. In addition to meals, tea or coffee or soft drinks will be available in the coffee foyer during set periods to cover mid-morning and mid-afternoon breaks between classes. Light refreshments are available also in H Block, Robin House, the Avenham Annexe, Marshall House and Heatley Street at the same times.

In the interests of hygiene students are requested to observe any restrictions on smoking in the dining room.

Requests for any special catering should be made in the first instance to the Deputy Chief Administrative Officer well in advance of the occasion.

Stationery Shop

The College Stationery shop is open on two occasions during the day, namely 8.50 to 9.15am., 1.00 to 2.00pm. Students may purchase the usual items of stationery, and also special laboratory and note books necessary for many courses.

Outside accommodation

Shortage of accommodation makes it necessary for some classes to be held outside the main Polytechnic premises. These classes are indicated by room number prefixes

as follows in the several Polytechnic documents dealing with teaching accommodation:

Av	School of Art and Design Annexe, Avenham Lane, Preston
BTU	Blood Transfusion Unit, Lancaster
HS	Heatley Street, Preston
MH	Marshall House, Ringway, Preston
PRI	Preston Royal Infirmary, Deepdale Road, Preston
RH	Robin House, Fylde Street, Preston

Societies and Professional Bodies

Lecture meetings of societies and professional bodies are frequently held in the Polytechnic.

Notice of the lectures will be displayed in the main entrance foyer during the session. Individual students and members of staff are welcome to attend. Application for groups to attend should be made through the Director to the local secretary of the organisation.

Students' Union

Telephone: 0772-53852

The Union is governed and organised by students of the Polytechnic and is affiliated to the National Union of Students. The supreme governing body of the Union is the General Meeting at which matters of policy are decided. Control over day-to-day business and administration is the responsibility of the Students' Union Council acting through an Executive Committee. Execution of Union policy is the responsibility of the sabbatical President, other Principal Officers, Committee Chairmen and a salaried Secretary.

Officers of the Union

President: Derek Kerr
Internal Vice-President: Tony Browne
External Vice-President: Gareth Lloyd
Treasurer: Peter Hall
Secretary: Pat Jolly

The Union arranges general social activities, offers financial and other help in the formation of student societies, and maintains contact with students in other educational institutions. It is financed mainly by a grant from the governing body of the Polytechnic, income from services and functions organised by the Union itself, and other sundry income.

All students other than those enrolled in special courses are automatically admitted to membership of the Students' Union. Membership cards will be issued at enrolment entitling students to participate in all social activities, to join any student club or society and to vote in elections, including the election of student members to the Polytechnic Council. Union meetings and other activities, including the holding of elections, operate under the Students' Union Constitution.

The Union retains the services of a local firm of Solicitors and, through the Union, students may obtain initial advice on legal matters.

All student Clubs and Societies in the Polytechnic are affiliated to the Students' Union and special subscriptions may be required for membership of some clubs and societies. Dances and other social events are arranged in the Polytechnic and in the town. Various recreational facilities are available by arrangement with the Senior Lecturer in Physical Recreation. A Students' Union Handbook, published and issued free by the Union, describes the facilities offered by the Union and details in full the Students' Union Constitution. It is obtainable from the Union Office or from any of the Principal Officers. All enquiries concerning student activities should be addressed to the Secretary, Preston Polytechnic Students' Union, Corporation Street, Preston, PR1 2TQ.

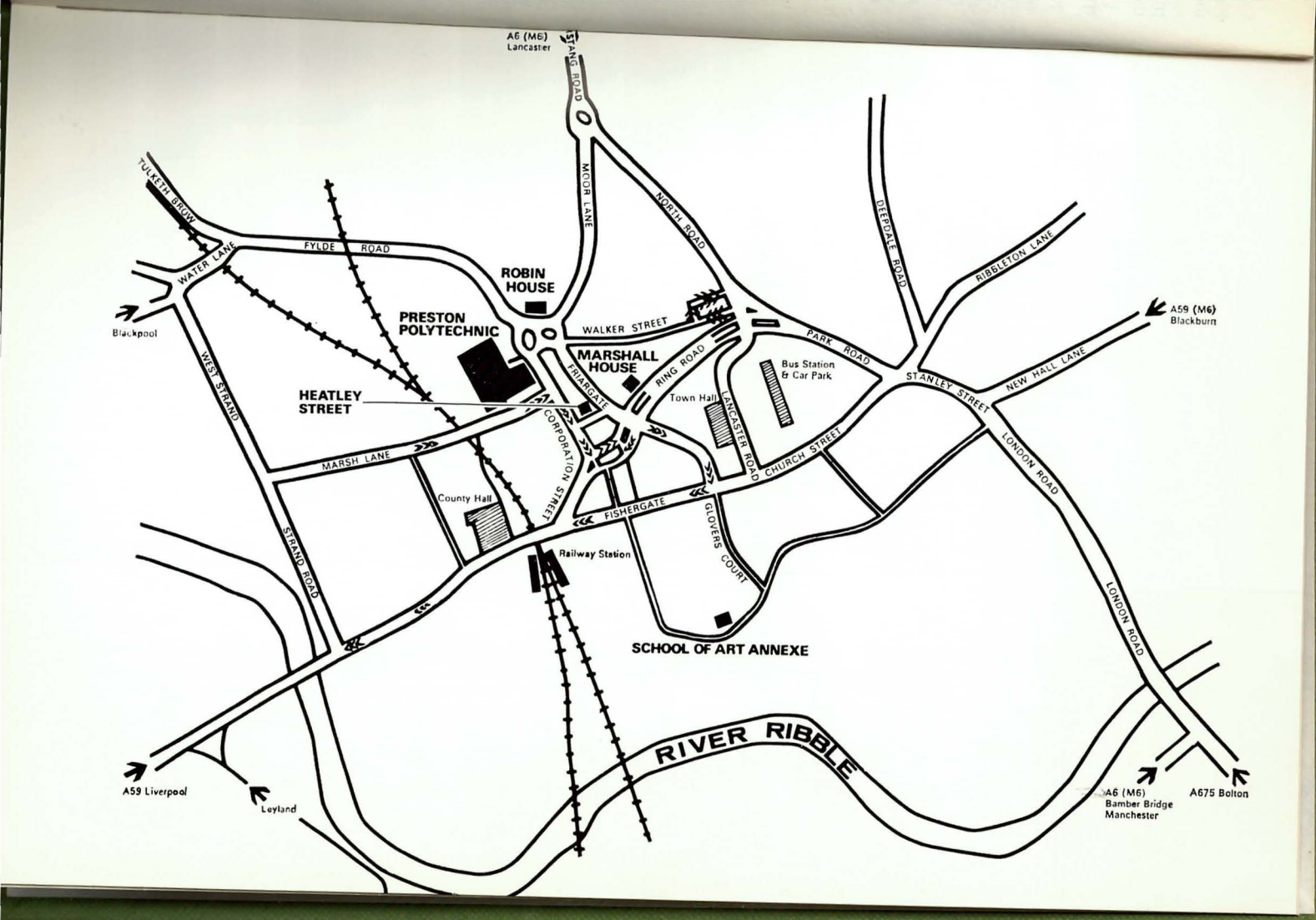
Union Premises

A Common Room and Offices, allocated exclusively for student use, are located in the communal block of the main Polytechnic premises, where the Union Secretary and Principal Officers of the Union may be contacted.

Plans have been produced for a new Union Building, to be sited near the centre of the extended Polytechnic campus, and this will contain offices, lounges, games rooms, bars and a large specially designed area for films, theatre, formal dinners and other functions. This building will be included in the first phase of the physical development of the Polytechnic and it is hoped that building will commence in 1975.

The National Union of Students

This is the national organisation representing some 700,000 students in 700 educational institutions of all kinds and sizes. It has a permanent staff and offices and negotiates with the Department of Education and Science on behalf of students both collectively and individually. It is an effective source of information on all aspects of student life, and will deal with student problems individually or through the Union Officers within their particular institutions. Facilities offered include insurance cover of all kinds at favourable rates, special travel facilities including travel abroad and special discounts available at shops and stores. Students requiring information or advice on these and other matters should contact the External Vice-President, Gareth Lloyd.


A6 (M6)
Lancaster
LANCS ROAD
MOOR LANE
NORTH ROAD
DEEPDALE ROAD
RIBBLETON LANE
A59 (M6)
Blackburn
TUCKETH BROW
WATER LANE
FYLDE ROAD
Blackpool
ROBIN HOUSE
PRESTON POLYTECHNIC
WALKER STREET
MARSHALL HOUSE
RING ROAD
PARK ROAD
Bus Station & Car Park
STANLEY STREET
NEW HALL LANE
HEATLEY STREET
FRIARGATE
Town Hall
LANCASTER ROAD
CHURCH STREET
WEST STRAND
CORPORATION STREET
MARSH LANE
County Hall
FISHERGATE
GLOVERS COURT
LONDON ROAD
Railway Station
STRAND ROAD
SCHOOL OF ART ANNEXE
RIVER RIBBLE
A59 Liverpool
Leyland
A6 (M6)
Bamber Bridge
Manchester
A675 Bolton