1951

Architecture and Building: Prospectus for Day and Evening Classes 1951-52

City of Dublin Vocational Education Committee

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DEPARTMENT OF
ARCHITECTURE
AND BUILDING

TECHNICAL INSTITUTE
BOLTON STREET, DUBLIN

1951-52

PROSPECTUS
FOR DAY AND EVENING
CLASSES
CALENDAR — SESSION 1951-52

1951—SEPT. 3 MONDAY
Wholetime Day Courses open for enrolment; Wholetime Day Apprentice Scholarship Courses resume work.

" 10 MONDAY
Part-time Day Courses open for enrolment.

" 17 MONDAY
Evening Courses open for enrolment. All other Day Courses commence work.

" 24 MONDAY
Evening Courses commence work.

DEC. 19 WEDNESDAY
Final Class meetings before Christmas Vacation.

1952—JAN. 7 MONDAY
All Classes resume work after Christmas Vacation.

MAR. 17 MONDAY
St. Patrick's Day. School closed.

APR. 8 TUESDAY
Final Class meetings before Easter Vacation.

" 16 WEDNESDAY
Evening Classes resume work after Easter Vacation.

" 21 MONDAY
Day Classes resume work after Easter Vacation.

MAY 2 FRIDAY
Final meetings of Evening Classes.

" 3 SATURDAY
Fieldwork in connection with Evening Classes in Surveying and Levelling commences.

JUNE 2 MONDAY
Whit Monday. School closed.

" 16 MONDAY
Sessional Examinations commence.

" 28 SATURDAY
Summer Term closes.

Schools closed on all Bank Holidays not specified in above calendar.

DEPARTMENT OF ARCHITECTURE AND BUILDING

Head of Department: D. O'Dwyer, B.Arch., M.R.I.A.I.
Vice-Principal

Assistant Head of Department: B. O'Reilly, B.Arch., A.R.I.B.A.
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CITY OF DUBLIN VOCATIONAL EDUCATION COMMITTEE

Councillor Michael J. O'Higgins (Vice-Chairman), 11 St. Mary's Road, Ballsbridge, Dublin.
Alderman Dr. Cormac Breathnach, T.D., 384 Clontarf Road, Dublin.
Alderman Bernard Butler, B.A., T.D., 16 Healthfield Road, Terenure, Dublin.
Alderman John McCann, T.D., 68 Fortfield Road, Terenure, Dublin.
Councillor Joseph Barron, 10 South Circular Road, Portobello, Dublin.
Councillor Blaith Breathnach, 58 Bannow Road, Cabra West, Dublin.
Councillor Patrick J. Cahill, P.C., 64 Aungier Street, Dublin.
Councillor Timothy J. Murray, P.C., "Cresswell", 9 St. Peter's Road, Phibsboro, Dublin.
Mr. W. J. Whelan, 61 Lower Beechwood Avenue, Ranelagh, Dublin.
Mr. Eamon Delaney, 29 Oulton Road, Clontarf, Dublin.
Michael O Muircheartaigh (Commdt.), 56 Vernon Avenue, Clontarf, Dublin.
Mrs. Mary Mulvey, P.C., Co.C., Readsdale, Main Street, Dundrum, Co. Dublin.
Michael O Foghluada, 5 Cabra Road, Dublin.

Offices—Town Hall, Merrion Road, Ballsbridge, Dublin.
Chief Executive Officer.

CITY OF DUBLIN VOCATIONAL EDUCATION SUB-COMMITTEE  
(Technical Institute, Bolton Street)

Councillor Blaith Breathnach, 58 Bannow Road, Cabra W.
Mr. Gerald Doyle, Dublin Operative Plasterers' Trade Society.
Mr. Robert Murphy, Master Jewellers' Association.
Mr. M. P. Rowan, 52 Capel Street, Dublin.
Mr. W. J. Whelan, Dublin Typographical Provident Society.
Mr. Hiliary Williams, Ancient Guild of Incorporated Brick and Stonemasons.
Mr. G. E. Hetherington, Master Printers' Association.
Mr. A. J. Wilson, Dublin Master Printers' Association.
Mr. P. J. Kearney, Irish Engineering Industrial Union.

Offices—The Technical Institute, Bolton Street, Dublin.
MARTIN Keady, B.E., B.Sc., A.R.C.Sc.I.
Principal.

Telephone: 43553-4.

ADVISORY COMMITTEES

Architecture

J. P. Alcock, B.Arch., M.R.I.A.I., A.R.I.B.A.
W. Howard Cooke, P.P.R.I.A.I.
A. R. I. B.A.
A. H. Hope, B.Arch., M.R.I.A.I., A.R.I.B.A.
F. B. Meehan, M.R.I.A.I.
D. O'Toole, M.R.I.A.I.

Quantity and Building Surveying

J. A. Kavanagh, F.S.I.
E. F. N. Taylor, F.S.I.

Building Trades

E. Thompson
J. Dolan
E. Gibney
M. Creedon
J. Parsons
G. Malcolm
T. Malone

A. J. Gallagher
D. Glasgow, M.I.H.V.E.
H. A. Hallett

Board of Architectural Education of the Royal Institute of the Architects of Ireland.

Royal Institution of Chartered Surveyors (Eire Branch).

Master Builders' Association.

Association of Master Plumbers, Heating and Ventilating Engineers of Ireland.
ADVISORY COMMITTEES (contd.)

Building Trades (contd.)

C. M. Forde
Thos. F. Power
Arthur C. Sibthorpe
Francis O'Connor
John Newell
Patrick Holohan
Christopher Carrick
Joseph Clarke
Daniel O'Brien
Leo Crawford
Gerald Doyle
Jonal O'Reilly

National Association of Master Painters and Decorators of Ireland.

Brick and Stonemasons' Society.

Plumbers', Glaziers' and Domestic Engineers' Union.

Operative Plasterers' Trade Society.

John P. O'Leary, National Amalgamated Society of Painters.

John Mulhall, Irish National Painters' Union.

L. Hudson, United House and Ship Painters' Union.

TECHNICAL INSTITUTE, BOLTON STREET

Principal:
MARTIN KEADY, B.E., B.SC., A.R.C.S.C.I.

Vice-Principal:
DONAL O'DWYER, B.ARCH., M.R.I.A.I.

DEPARTMENT OF MECHANICAL ENGINEERING

Head of Department:
The Principal

Assistant Head of Department:

Head of Motor Car Engineering Division:
W. D. Pile, A.M.I.M.E., A.M.I.A.E.

Chief Instructor (Mechanical Engineering Trades):
H. Fitzgerald

DEPARTMENT OF ARCHITECTURE AND BUILDING

Head of Department:
The Vice-Principal

Assistant Head of Department:
B. O'Reilly, B.Arch., A.R.I.B.A.

Chief Instructor (Building Trades):
R. Grimes, A.R.I.C.C., FULL TECH. C. & G.

DEPARTMENT OF PRINTING AND BOOK PRODUCTION

Head of Department:
W. J. Fitzpatrick, FULL TECH. C. & G.

SCIENCE DIVISION

Head of Division:

DAY JUNIOR TECHNICAL SCHOOL

Teacher-in-Charge:
L. Mac Amhlaobh, B.A.

Stock-taker:
W. J. N. O'Brien, Dipl. Ing.

Clerk:
Tomas O Somachain.
DEPARTMENT OF ARCHITECTURE AND BUILDING
TEACHING STAFF

1. Architectural Design:
   D. F. O'Dwyer, B.Arch., M.R.I.A.I.
   B. O'Reilly, B.Arch., A.R.I.B.A.
   A. Brady, B.Arch.
   P. Mac Cionnaith, B.Arch., M.R.LA.I.

2. Building Construction, Specifications and Materials:
   D. F. O'Dwyer, B.Arch., M.R.I.A.I.
   B. O'Reilly, B.Arch., A.R.I.B.A.
   O'Neill, B.Arch., M.R.I.A.L
   P. Tuite, B.Arch.
   W. Cantwell, B.Arch., M.R.I.A.I.

3. History of Architecture:
   B. O'Reilly, B.Arch., A.R.I.B.A.

4. Structural Engineering, Surveying:
   W. J. O'Brien, Dipling.
   M. Niall, M.Sc., B.Comm.

5. Quantities:
   M. J. Burke, M.S.A., F.S.I.
   L.R.I.B.A.
   H. Darker, P.A.S.I.

7. Mathematics and Science:
   G. Latchford, B.E., B.Sc.
   S. H. Knight, B.A.
   W. J. O'Brien, Dipling.
   M. Niall, M.Sc., B.Com.
   S. O'Tuama, B.Sc.
   S. Rossiter.

8. Geometry and Drawing:
   A. Brady, B.Arch.
   J. Cunningham, A.B.I.C.C., Full Tech. C. & G.
   J. Hannan
   M. Nolan.
   M. McGoldrick
   S. O'Tuama, B.Sc.

9. Commercial and Legal Subjects:
   H. McDevitt, Barrister-at-Law

10. Languages:
    L. MacAmhlaoidh, B.A. (Hons.)
    M. Moore
    M. O Mainnin

11. Physical Training:
    M. Doogan

12. Trade:
    Bricklaying—
    E. Byrne
    A. Williams
    D. Cox
    J. Thornberry
    S. Murray

    Cabinetmaking—
    M. Murray
    C. Costello

    Coachbuilding—
    H. Dempsey
    P. O'Reilly

    Coachpainting—
    R. McNamara
    P. McKenna

    Coachtrimming—S. McConaill

    Carpentry and Joinery—
    T. Bridgeman, A.B.I.C.C.
    J. O'Byrne
    J. Cunningham, A.B.I.C.C., Full Tech. C. & G.
    M. Nolan
    M. McGoldrick
    D. Molumby
    T. Kiernan
    B. Dunne
    T. Kelly
    P. O'Neill

    Painting and Decorating—
    C. O'Byrne, F.I.B.D. (Inc.)
    P. Gordon
    J. Kenny

    Plastering—
    L. Comerford
    W. Saunders

    Plumbing—
    J. Bolton, Full Tech. C. & G.
    D. Rooney
    D. McGrath
    J. Darby

    Woodcutting Machinery—
    J. Wall
    J. Keogh
GENERAL REGULATIONS FOR THE SCHOOLS AND
CLASSES OPERATING UNDER THE AUTHORITY
OF THE COMMITTEE

1. ADMISSION AND ENROLMENT

(a) In general, applicants for admission to the Classes and Courses must be not less than 14 years of age, but admission to a whole-time Day Course may be granted where the applicant is over 13 years of age and has been enrolled for at least one year in the Sixth Standard of a Primary School. This Regulation does not apply to the School of Music or Colaiste Muire, Cathal Brugha Street.

(b) The Committee, in accordance with the means and facilities at its disposal, has provided classes for the sole purpose of supplementing the practical trade training of persons actually employed at and engaged in the various operations of the trade and whose employment as such is accepted by the recognised Unions of the trades concerned.

(c) In determining whether an applicant for admission to one of these practical trade classes complies with the above conditions the Committee is guided, where necessary, by the evidence supplied by the Masters' Associations and the official Trade Unions of the trade concerned.

(d) Admission to a particular class or course is subject to the published regulations relative to that class or course.

(e) One month after the opening date of classes or courses students will be permitted to enrol only with the special permission of the School Authority.

(f) Pupils in attendance at Primary and Secondary Schools are not eligible for enrolment except by special permission of the School Authority.

(g) The educational fitness of a student to enrol in a particular course may be decided by an examination or other means considered necessary.

(h) A student is not entitled to enrol in a class or course which the School Authority decides is too advanced for his/her standard of knowledge.

(i) Enrolment procedure:—

(i) Intending students must enter on the Enrolment Form supplied all the information required by the School Authority.

(ii) The classes or courses to be taken are decided in interview with a member of the School Staff.

(iii) The appropriate fee is then paid to an officer of the Committee and a receipt issued therefor. A student who pays a fee should insist that he/she receive an official receipt for the amount of the fee paid.

(iv) The appropriate class ticket/tickets is/are then issued to the student.

(j) (i) No student may attend a class until he/she has received a class ticket.

(ii) On first attendance at each class the student must tender to the teacher in charge his/her appropriate class ticket, together with the receipt for fee paid.

(k) Students will be enrolled during the period and at the times stated in the Committee's publications.

(l) The School Authority is authorised to refuse an enrolment, pending a decision thereon by the Committee.

2. FEES

(a) The fees payable for the several classes and courses included in the Scheme of Instruction are stated in the publications of the Committee, and must be paid in full on enrolment unless otherwise stated.
(b) Where a course includes subjects of different stages, the total fee will be computed on the basis that the initial fee is that of the highest stage.

(c) For enrolments in subjects ancillary to the original enrolment, in the same or another School or Department, the additional fee will be computed on the basis that all the classes have been selected on first enrolment. Where the additional subjects are deemed not to be ancillary, the fee payable will be as for a separate enrolment.

(d) The School Authority is authorised to decide if the additional enrolment is ancillary to the original enrolment.

(e) For fee purposes, Irish and/or Physical Training will be regarded as additional subjects to any class or course.

(f) Fees will not be refunded except where a class does not form.

(g) Cheques should be crossed and made payable to the City of Dublin Vocational Education Committee.

3. TRANSFERS
An enrolment is not transferable from one student to another. Transfers from one class to another; from one School to another; from Day classes to Evening classes; or from Evening classes to Day classes, with allowance for the fees paid, will be permitted only for a satisfactory reason and by special permission of the School Authority.

4. PRODUCTION OF ORIGINAL RECEIPT
Where applications are made for additional enrolments, or for transfers, the original receipt must be produced.

5. FORMATION AND CONTINUANCE OF CLASSES
The Committee reserves the right at any time to add or delete classes or courses to or from its Scheme of Instruction; to extend the period of a class; and to close a class, or to alter the day or times of a class meeting.

6. DISCIPLINE
The School Authority may suspend any student for breach of rules and regulations; absence from classes; irregular or unpunctual attendance; disorderly conduct in the School or within the School precincts; disobedience to a member of the staff; or for any other reason deemed sufficient. The Committee reserves the right to confirm such suspension and to cancel the enrolment without refund of fee. Where immediate action is required because of indiscipline on the part of the students, any member of the School Staff has authority to take appropriate measures, pending report to the School Authority.

7. SMOKING
Smoking is not permitted in the Schools.

8. INJURY TO STUDENTS
The Committee does not accept responsibility for injury to students resulting from careless conduct or neglect or disregard of regulations.

9. STUDENT PROPERTY
The Committee does not accept any responsibility for loss or damage to any student property—bicycles, hats, coats, books, etc.

10. SCHOOL PROPERTY
Where School property is damaged wilfully or through careless conduct on the part of students, such students (or their parents or guardians) may be required, on the order of the Committee, to pay for such repairs or replacements as may be necessary.

11. CHANGE OF ADDRESS
Students should notify the School Authority of any change of address.
12. BOOKS, STATIONERY, EQUIPMENT, DRESS

Students are expected to provide themselves with such books, stationery, equipment, and dress as may be required.

13. INFECTIOUS AND NOTIFIABLE DISEASES

The head of the household must inform the School Authority immediately of any infectious or notifiable disease which may occur in the house in which a student is residing. Such a student must not resume attendance until permitted to do so by a medical officer.

14. EXAMINATIONS

Permission to sit for Scholarship, Sessional, or other examinations held under the authority of the Committee, will be governed by the conditions relevant to the examinations.

15. SCHOOL AUTHORITY

The term “School Authority,” as used in these Regulations indicates the Chief Executive Officer, or an officer delegated to act on his behalf.

The above Regulations have been adopted by Resolution of the Vocational Education Committee for the City of Dublin and approved by the Minister for Education.

Conditions Regulating the Admission of Students to Classes and Courses

Whole-time Day Apprentice Scholarship Courses in Plumbing, Painting and Decorating, Bricklaying

These Courses are organised in close association with the Masters' Associations and the various official Trade Unions concerned. As these bodies accept responsibility for the placing of the boys in employment and as the numbers to be admitted to each year of the Courses must be related to the number of vacancies for employment which are likely to occur in the trades, the Scholarship holders will be selected by examination and interview from boys nominated by the Masters' and Trades' Unions concerned, in accordance with the regulations drawn up from time to time by the various Advisory Committees and approved by the Vocational Education Committee.

Practical Workshop Classes in Trade Subjects

These classes are provided for the sole purpose of supplementing the practical trade training of persons actually employed at and engaged in the various operations of the trade. The Committee realise that it is impossible for a person to learn a trade solely by attendance at these classes, and are further of the opinion that the admission to the classes of persons not actually engaged in the trades would be, not only of little use to such persons, but would prejudicially affect the instruction of those for whom the classes have been organised. Accordingly, the Committee reserve the right to restrict enrolment in the trade practical classes to those persons who are actually employed in the several processes and operations of the trade.
The classes in the Department of Architecture and Building to which this regulation refers in the Session 1951-52 will be the Evening Trade Classes in:

Bricklaying; Carpentry and Joinery; Plumbing; Plastering; Painting and Decorating; Cabinetmaking; Woodcutting Machinists' Work; Coachbuilding; Coachpainting; Coachtrimming.

And the Part-time Day Apprentice Workshop Classes in:

Cabinetmaking; Carpentry and Joinery; Plumbing; Painting and Decorating.

For admission to the trade classes as named, proof of actual employment in the several processes and operations of the trade will be certificates to that effect from the Masters' Associations and/or the official Trades Unions of the trade concerned.

Day and Evening Technological Courses—Architecture, Quantity and Building Surveying, Civil Engineering and Building Technology

Only such students will be admitted as have attained a standard of general education that will enable them to follow all the subjects of the Course with profit. In the absence of satisfactory evidence on this point, intending students may be required to pass a qualifying examination as a condition of admission.

General Description of the Activities of the Department

DAY ACTIVITIES

The Day activities comprise:

(a) Technological Courses in:
    Architecture; Quantity and Building Surveying.

(b) Whole-time Apprentice Scholarship Courses in:
    Bricklaying; Plumbing; Painting and Decorating.
    (These are described in detail in a separate Prospectus)

(c) Part-time Apprentice Courses in:
    Carpenter and Joinery; Plumbing; Painting and Decorating; Woodcutting Machinists' Work; Coachbuilding; Coachpainting; Cabinetmaking.

EVENING ACTIVITIES

The Evening activities comprise:

(a) Technological Courses in:
    Architecture; Civil Engineering; Quantity Surveying; Building Technology; Land Surveying and Levelling.

(b) Trade Courses in:
    Bricklaying; Carpentry and Joinery; Plumbing; Plastering; Painting and Decorating; Cabinetmaking; Woodcutting Machinery; Coachbuilding; Coachpainting; Coachtrimming.

The above Regulations have been adopted by Resolution of the Vocational Education Committee for the City of Dublin and approved by the Minister for Education.
DESCRIPTION OF COURSES

1. TECHNOLOGICAL COURSES

The Whole-time Course in Architecture is a 3-years' day course designed to bring students to the standard of the Intermediate Examination of the Royal Institute of the Architects of Ireland. Satisfactory completion of the course and success in the third year examination carries exemption from the Intermediate Examination of the Institute. It is necessary that students taking the course shall have passed the Preliminary Examination of that Institute or one of the examinations (e.g., Secondary Leaving Certificate or Matriculation) that confer exemption therefrom. On completion of this course, students are recommended to obtain employment in an architect's office and to continue for a further two years in the Part-time Course (see below) in preparation for the Final Examination.

The Part-time Course in Architecture is a 5-years' part-time day and evening course for students in Architects' offices designed to prepare them for the Intermediate and Final Examinations of the Royal Institute of the Architects of Ireland. It is assumed that students taking this course will have passed the Preliminary Examination of that Institute or one of the examinations carrying exemption therefrom. On completion of this course, students are recommended to obtain employment in an architect's office and to continue for a further two years in the Whole-time Course (see above) in preparation for the Final Examination.

The Evening Course in Architecture is a 3-years' evening course (fourth, fifth and sixth years) in preparation for the Final Examination of the Chartered Surveyors' Institution, and is suited to students who have completed one of the courses described above.

The Evening Course in Building Surveying is a 2½-years' evening course designed for students who are employed in engineering offices and leading to the Certificate Examinations of the Department of Education. Certificates are awarded in the Elementary, Intermediate and Advanced Stages to candidates who obtain passes in the following subjects:

- Elementary Stage: (i) Building Construction and
- (ii) Mathematics and Geometry.
INTERMEDIATE AND ADVANCED STAGES:

(i) Building Construction;
(ii) Structural Engineering or Builders' Quantities or Plane and Solid Geometry.

The Evening Course in Land Surveying and Levelling is suitable for assistants and students in Architects', Engineers' Surveyors', Builders' and Insurance offices. It comprises lectures and field work. The latter are held on Saturday afternoons during late spring and early summer.

2. TRADE COURSES

These courses are designed for apprentices and young journeymen engaged in the several trades. Every facility is given to students who wish to enter for the Trade Certificate Examinations of the Department of Education or of the City and Guilds of London Institute (see pages 21 & 22), these examinations being conducted in the School at the close of the evening session.

Evening Courses leading to the Department of Education Examinations are provided in the following trades:

Bricklaying, Carpentry and Joinery, Plumbing, Plastering, Painting and Decorating, Cabinetmaking, Woodcutting Machinery.

Evening Courses are also provided in the following trades:

Coach and Motor Body Building, Coach painting, Coach trimming.

Part-time Day Courses. Apprentices to certain trades are allowed time off to attend these courses of afternoon lectures and practical work. Courses are provided in the following trades:

Carpentry and Joinery, Painting and Decorating, Cabinetmaking, Plumbing.

PART-TIME DAY AND EVENING COURSES are provided in the following trades:

Woodcutting Machinists' Work, Coach and Motor Body Building, Coachpainting.

Similar part-time courses will be inaugurated in other trades in which the requisite conditions can be procured.

Whole-time Day Apprentice Scholarship Courses in Bricklaying, Plumbing, and Painting and Decorating are separately described in another Prospectus.

3. PHYSICAL TRAINING

Evening Classes in Physical Training are provided for students.

EXAMINATIONS

The Courses are designed to prepare students for the following examinations:

1. Department of Education Examinations

(a) Technological Certificate Examinations in Building.

(b) Trade Certificate Examinations in:

- Brickwork; Carpentry and Joinery; Plumbers' Work;
- Plasterers' Work; Painters' and Decorators' Work;
- Cabinetmaking; Woodcutting Machinists' Work.

2. Examinations of Professional Institutes

The Royal Institute of the Architects of Ireland.
The Royal Institution of Chartered Surveyors (Eire Branch).
The Institution of Civil Engineers of Ireland.

3. City and Guilds of London Institute
SCHOLARSHIPS AND PRIZES

The City of Dublin Vocational Education Committee offer the following scholarships annually:

Day Apprentice Scholarships, entitling the holders to free training for two years in the Whole-time Day Apprentice Scholarship Courses, together with a payment of twelve shillings per week during the first year and sixteen shillings per week during the second year of the Courses. On the conclusion of the Courses, students are accepted as third-year apprentices to the trades. The scholarships are awarded to candidates between the ages of 14 and 16 years who have passed a qualifying examination of Primary Leaving Certificate standard and who have been selected on the result of an interview by a board, consisting of representatives of the School and of the Employers' and Operatives' Associations of the trades concerned. Examinations and interviews are generally conducted in the month of March.

The Dublin Mechanics' Institute Scholarships are provided for by the Dublin Mechanics' Institute Residuary Fund. One scholarship is awarded annually in the Building Trades Groups to apprentices between the ages of 16 and 19 years who have been in attendance at a Technical Course during the previous session and made a specified minimum attendance. The Scholarships are tenable for three years and are valued about £3 each per year.

The Department of Education offers the following medals and prizes annually in connection with their examinations:

(a) Technological Certificate Examinations. A prize of £1 in each subject of the Elementary and Intermediate Stages. A silver medal, a first prize of £2 and a second prize of £1 in each subject of the Advanced Stage.

(b) Trade Certificate Examinations. A prize of £1 in each of the practical and written examinations of the Junior Stage. A bronze medal and a prize of £2 in each of the practical, and a prize of £1 in each of the written, examinations of the Senior Stage.

The William Rooney Memorial Prizes are provided for by a trust fund, established in memory of William Rooney (Fear na Muinmitr), the Irish poet and patriot. A sum of approximately £12 is available annually for awards to students who are apprentices to the Mechanical Engineering and Building trades. The award alternates in successive years between students of the Engineering and Building trade groups, but is not available to holders of scholarships in the Day Apprentice Courses. A competent knowledge of Irish is an essential requirement, in addition to regular attendance and proficiency.

Brick and Stonelayers' Union Prizes. A sum of £5 is provided annually for award as prizes to students of the Brickwork Courses. The Union conducts the examination.

Master Painters' Association Prize. A sum of £3 3s. 0d. is provided annually for award as prizes to students of the Painting and Decorating Courses.

Painters' Unions Prize. A sum of £3 3s. 0d. is provided annually for award as prizes to students of the Painting and Decorating Courses.

Gypsum and Bricks Prize. An annual contribution of £50 is made by Gypsum and Bricks, Ltd., for award as prizes to students of the Plastering Courses.

Master Plasterers' Association Prize. A sum of £5 is provided annually for award as prizes to students of the Plastering Courses.
SCHOLARSHIPS AND PRIZES (contd.)

Operative Plasterers' Trade Society Prize. A sum of £5 is provided annually for award as prizes to students of the Plastering Courses.

Royal Institute of the Architects of Ireland Prize. A sum of £5 5s. 0d. is provided for award as prizes to students of the Architectural Courses.

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FEES

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<tr>
<th>Course</th>
<th>Fee per Session £ s. d.</th>
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<td>Architecture (Part-time)</td>
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<tr>
<td>Additional Subjects</td>
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EQUIPMENT


Laboratories

The Laboratories, covering a floor area of 7,500 sq. feet, are:

(a) AN ELEMENTARY PHYSICS AND CHEMISTRY LABORATORY with Preparation Rooms and Stores equipped with the usual apparatus required for preliminary courses in General Science.

(b) A MECHANICS AND MATERIALS TESTING LABORATORY well equipped with apparatus for demonstrating the laws of statics and dynamics and with machines for testing engineering and building materials in compression, tension, shear, bending and torsion, and for measuring deflections and extensions under load. The equipment includes an Avery vertical single-lever testing machine capable of applying tension or compression up to 5 tons; a vertical-screw testing machine for deflection and cross-breaking tests; a torsion testing machine; a cement testing machine of the compound lever type; a beam testing apparatus; a Searle extensometer and several wire extensometers and compression and tension testing machines for springs; strut apparatus fatigue testing machine; various apparatus for determining moduli of elasticity.
(c) A Heat Laboratory with equipment for experimental work on Heat and Heat Engines, including Jünger and Bomb Calorimeters, flashpoint and viscosity apparatus, pyrometer (Whipple’s Heat Recorder), equipment for the study of the gas laws (including temperature-pressure apparatus for high pressures), steam pressure gauges, Peugeot Engine and the Davidson apparatus demonstrating the principles of domestic hot-water installations. Extensions of the equipment are being planned to permit of making comparative measurements of the thermal conductivity of building materials.

(d) An Electricity Laboratory equipped for experimental work on D.C. with special equipment for use in connection with the courses in Automobile Electricity.

Drawing Offices and Art Room

There are six well equipped and well lighted Drawing Offices and an Art Room covering in the aggregate a floor area of 7,000 sq. ft. The Art Room is provided with a good selection of models and plaster casts.

Workshops

Fully equipped workshops are provided as follows:

- Brickwork and Masonry
- Carpentry and Joinery
- Woodcutting Machinery
- Plumbing (equipped with oxy-acetylene welding, cutting and lead-burning plants)
- Plastering
- Painting and Decorating
- Cabinetmaking
- Coach and Motor-body Building
- Coachpainting and Coachtrimming

There is a building yard in which students of the several building classes co-operate in the erection of small buildings.

Classrooms and Lecture Rooms

There are a number of well-lighted classrooms equipped on modern lines and covering in the aggregate a floor area of over 6,000 sq. ft., and a Cinema Theatre with seating for 200 students.

Gymnasium

A large Gymnasium covering a floor area of 2,200 sq. ft. is provided for Physical Training.

Surveying and Levelling Equipment for class work and field work includes 100-ft., and Gunter’s chains and accessories; two improved Dumpy levels and one Crooke Throughton level; theodolite; levelling staffs; plane-table clinometer; prismatic compass; planimeter; the usual scales, computing scales, proportional dividers, protractors, etc.

Models and Specimens

A large collection of Building Construction models has been acquired and is constantly being added to. These include scale and full-size models of carpentry and joinery construction, plumbing work, structural engineering details, sanitation and drainage details, full-size specimens of brickwork and masonry and combined building details, examples of decorative plasterwork and specimens of building materials.

Visual Aids

The following visual aids are provided:—

- 35 mm. silent film projector
- 16 mm. sound film projector
- Film strip projector
- Slide projectors and epidiascope
Courses and Time Tables

1. ARCHITECTURE, SURVEYING, CIVIL ENGINEERING, AND BUILDING TECHNOLOGY

WHOLE-TIME COURSE IN ARCHITECTURE

<table>
<thead>
<tr>
<th>Subject</th>
<th>Hours per Week</th>
<th>Room</th>
<th>Teacher</th>
<th>No. of Syllabus</th>
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<td>FIRST YEAR:</td>
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<tr>
<td>Architectural Drawing and Design-I</td>
<td>15</td>
<td>B 17</td>
<td>A. Brady</td>
<td>100, 101</td>
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<tr>
<td>Building Construction—Elem.</td>
<td>6</td>
<td>B 17</td>
<td>B. O'Reilly</td>
<td>106</td>
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<tr>
<td>History of Architecture—I</td>
<td>1</td>
<td>B 15</td>
<td>B. O'Reilly</td>
<td>112</td>
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<tr>
<td>Free Drawing and Modelling—I</td>
<td>3</td>
<td>B 24</td>
<td>J. Hannan</td>
<td>116</td>
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<tr>
<td>Plane and Solid Geometry</td>
<td>1</td>
<td>B 17</td>
<td>R. Grimes</td>
<td>126</td>
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<tr>
<td>Perspective and Scigraphy</td>
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<tr>
<td>Mathematics and Mechanics</td>
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<td>B 18</td>
<td>W. O'Brien</td>
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<tr>
<td>Bricklaying and Masonry (Practical)</td>
<td>3</td>
<td>O 17</td>
<td>E. Byrne</td>
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| SECOND YEAR:                           |                |      |               |                 |
| Architectural Design—II               | 13             | B 15 | D. O'Dwyer    | 102             |
| Building Construction—Inter. I        | 6              | B 15 | B. O'Reilly   | 117             |
| History of Architecture—II            | 1              | B 15 | B. O'Reilly   | 113             |
| Free Drawing and Modelling—II         | 3              | B 24 | J. Hannan     | 116             |
| Mechanics, Strength of Materials and Theory of Structures | 3 | B 18 | W. O'Brien | 121, 124        |
| Physics (Heat and Electricity)        |                | A 11 | S. Kelleher   | 127, 128        |
| Chemistry                              |                |      |               | 131             |
| Carpentry and Joinery (Practical)     | 3              | B 21 | R. Grimes     | 142             |

| THIRD YEAR:                           |                |      |               |                 |
| Architectural Design—III              | 13             | B 18 | D. O'Dwyer    | 103             |
| Building Construction—Inter. II       | 6              | B 12 | B. O'Reilly   | 108             |
| Free Drawing and Modelling—III        | 3              | B 24 | J. Hannan     | 117             |
| Strength of Materials and Theory of Structures | 3 | B 18 | W. O'Brien | 124             |
| History of Architecture—III           | 1              | B 15 | B. O'Reilly   | 114             |
| Physics (Sound and Light)             | 1              | A 6  | W. Helson     | 128, 130        |
| Surveying and Levelling               | 1              | B 18 | W. O'Brien    | 132             |
| Plumbing (Practical)                  | 3              | B 11 | J. Bolton     | 143             |

Note.—On completion of the third year in this course students transfer to the fourth year of the part-time course (see page 29).
FIFTH YEAR:

Architectural Design—I—V 9
Specifications and Materials 211
Structural Engineering—Adv. 219

Notes:

1. Evening Classes in Design for third, fourth and fifth year students who are unable to attend the afternoon classes will be provided if sufficient applications are received to justify the formation of these classes.
2. Fieldwork on Saturday afternoons during late spring and early summer.

WHOLE-TIME COURSE IN QUANTITY AND BUILDING SURVEYING

<table>
<thead>
<tr>
<th>Subject</th>
<th>Hrs. per Week</th>
<th>Room</th>
<th>Teacher</th>
<th>No. of Syllabus</th>
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<tr>
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<tr>
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<td>Draughtsmanship—I</td>
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<td>Geometry—Plane and Solid—Elem. I</td>
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<td>Mensuration and Trigonometry—I</td>
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<td>G. Walsh</td>
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<tr>
<td>Economics—I</td>
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<td>G. Walsh</td>
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<td>H. McDevitt</td>
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<td>M. J. Burke</td>
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<td>H. McDevitt</td>
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Note.—The second year of the course ends in March, 1953.
### EVENING COURSE IN QUANTITY AND BUILDING SURVEYING

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<th>Class No.</th>
<th>Subject</th>
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<th>Hour</th>
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<th>Teacher</th>
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<td>Thursday</td>
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<td>B 12</td>
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<td>B 28</td>
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<td>Tuesday</td>
<td>7:30-9:30</td>
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### EVENING COURSE IN CIVIL ENGINEERING

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<td>Thursday</td>
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<td>Surveying and Levelling—II ... ... ...</td>
<td>Wednesday</td>
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<td>FOURTH YEAR:</td>
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<td>Friday</td>
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Note: 1. Fieldwork on Saturday afternoons during late Spring and early Summer.
### Course B

<table>
<thead>
<tr>
<th>Class No.</th>
<th>Subject</th>
<th>Day</th>
<th>Hour</th>
<th>Room</th>
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<tr>
<td>207</td>
<td>Surveying and Levelling</td>
<td>Wednesday</td>
<td>7:30-9:30</td>
<td>B 29</td>
<td>W. O'Brien</td>
<td>132</td>
</tr>
<tr>
<td>215</td>
<td>Surveying and Levelling</td>
<td>Thursday</td>
<td>7:30-9:30</td>
<td>B 29</td>
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### EVENING COURSE IN SURVEYING AND LEVELLING

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<td>207</td>
<td>Surveying and Levelling</td>
<td>Wednesday</td>
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<td>B 29</td>
<td>W. O'Brien</td>
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<td>Surveying and Levelling</td>
<td>Thursday</td>
<td>7:30-9:30</td>
<td>B 29</td>
<td>W. O'Brien</td>
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Note: 1 Fieldwork on Saturday afternoons during late Spring and early Summer.

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### 2. COURSES IN THE BUILDING, FURNITURE, AND COACHBUILDING TRADES

(Trade Apprentices)

#### EVENING COURSE IN BRICKLAYING AND STONELAYING

<table>
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<tr>
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<tr>
<td>216</td>
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<td>7:30-9:30</td>
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<td>J. Thornberry</td>
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<td>Trade, Drawing and Theory—1</td>
<td>Fri.</td>
<td>7:30-9:30</td>
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<td>Trade Practice—2 A</td>
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<td>A. Williams</td>
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#### EVENING COURSE IN CARPENTRY AND JOINERY

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<td>P. O'Neill</td>
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<td>Workshop Drawing—A</td>
<td>Tues.</td>
<td>7:30-9:30</td>
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Note: 1 Fieldwork on Saturday afternoons during late Spring and early Summer.
### EVENING COURSE IN PLASTERING

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<td>Trade, Practice—I</td>
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<td>7.30-9.30</td>
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<td>L. Comerford</td>
<td>103</td>
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<td>Tues.</td>
<td>7.30-9.30</td>
<td>C 20</td>
<td>P. Gordon</td>
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<td>J. Hannan</td>
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<th>No. of Syllabus</th>
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<td>7.30-9.30</td>
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<td>7.30-9.30</td>
<td>C 16</td>
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### EVENING COURSE IN PAINTING AND DECORATING

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<th>Room</th>
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<td>7.30-9.30</td>
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<td>J. Hannan</td>
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<th>Room</th>
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<td>J. Kenny</td>
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<td>282</td>
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<td>C 11</td>
<td>J. Kenny</td>
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<td>283</td>
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<td>7.30-9.30</td>
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<td>Trade, Theory and Practice—3</td>
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<td>7.30-9.30</td>
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<td>C. Costello</td>
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<tr>
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<td>7.30-9.30</td>
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### EVENING COURSE IN COACHTRIMMING

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<td>Trade, Theory and Practice—I</td>
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<td>7.30-9.30</td>
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<td>7.30-9.30</td>
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<td>S. McConaill</td>
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<td>Trade, Theory and Practice—4</td>
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<td>7.30-9.30</td>
<td>D 16</td>
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PART-TIME DAY AND EVENING COURSE IN COACHPAINTING

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<th>Hour</th>
<th>Room</th>
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<td>Tues.</td>
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<td>R. McNamara</td>
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<tr>
<td>273</td>
<td>Free Drawing—1</td>
<td>Wed.</td>
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<td>B 24</td>
<td>J. Hannan</td>
<td>198</td>
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<tr>
<td>302</td>
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<td>7.30-9.30</td>
<td>C 12</td>
<td>P. McKenna</td>
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<tr>
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<td>C 12</td>
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<td>C 12</td>
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<tr>
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PART-TIME DAY COURSE IN CARPENTRY AND JOINERY

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<td>1/4</td>
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<td>R. Grimes</td>
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<tr>
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<td>1/4</td>
<td>B 21</td>
<td>T. Bridgeman</td>
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<td><strong>SECOND YEAR:</strong></td>
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<td>B 17</td>
<td>R. Grimes</td>
<td>135, 136</td>
</tr>
<tr>
<td>Trade, Theory and Practice—2</td>
<td>1/4</td>
<td>B 21</td>
<td>T. Bridgeman</td>
<td>169, 170</td>
</tr>
<tr>
<td><strong>THIRD YEAR:</strong></td>
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<tr>
<td>Plane and Solid Geometry</td>
<td>1/4</td>
<td>B 17</td>
<td>R. Grimes</td>
<td>187</td>
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<tr>
<td>Trade, Theory and Practice—3</td>
<td>1/4</td>
<td>B 21</td>
<td>T. Bridgeman</td>
<td>171, 172</td>
</tr>
</tbody>
</table>

PART-TIME DAY COURSE IN WOODCUTTING MACHINISTS’ WORK

<table>
<thead>
<tr>
<th>Class No.</th>
<th>Subject</th>
<th>Day Classes</th>
<th>Evening Classes</th>
<th>Room</th>
<th>Teacher</th>
<th>No. of Syllabus</th>
</tr>
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<tbody>
<tr>
<td>354</td>
<td>Trade, Theory and Practice—1</td>
<td>1/4</td>
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<td>B 17</td>
<td>R. Grimes</td>
<td>166</td>
</tr>
<tr>
<td>355</td>
<td>Woodwork—1</td>
<td>1/4</td>
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<td>B 25</td>
<td>R. Grimes</td>
<td>165</td>
</tr>
<tr>
<td>356</td>
<td>Metalwork—1</td>
<td>1/4</td>
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<td>D 5</td>
<td>O. Crotty</td>
<td>224</td>
</tr>
<tr>
<td>354</td>
<td>Trade, Theory and Practice—1</td>
<td>Monday</td>
<td>7.30-9.30</td>
<td>C 7</td>
<td>J. Wall</td>
<td>176</td>
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<tr>
<td>355</td>
<td>Woodwork—2</td>
<td>Tuesday</td>
<td>7.30-9.30</td>
<td>C 18</td>
<td>J. Wall</td>
<td>175</td>
</tr>
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</table>

PART-TIME DAY COURSE IN PLUMBING

<table>
<thead>
<tr>
<th>Subject</th>
<th>Hours per Week</th>
<th>Room</th>
<th>Teacher</th>
<th>No. of Syllabus</th>
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<td><strong>FIRST YEAR:</strong></td>
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<tr>
<td>Trade, Theory and Practice—1</td>
<td></td>
<td>6</td>
<td>D 11</td>
<td>J. Bolton</td>
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<td><strong>SECOND YEAR:</strong></td>
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<td></td>
</tr>
<tr>
<td>Trade, Theory and Practice—2</td>
<td></td>
<td>6</td>
<td>D 11</td>
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</table>

PART-TIME DAY COURSE IN PAINTING AND DECORATING

<table>
<thead>
<tr>
<th>Subject</th>
<th>Hours per Week</th>
<th>Room</th>
<th>Teacher</th>
<th>No. of Syllabus</th>
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<tr>
<td><strong>FIRST YEAR:</strong></td>
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</tr>
<tr>
<td>Workshop Drawing—1</td>
<td>1/4</td>
<td>B 17</td>
<td>R. Grimes</td>
<td>166</td>
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<tr>
<td>Free Drawing—1</td>
<td>1/4</td>
<td>C 20</td>
<td>J. Hannan</td>
<td>198</td>
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<tr>
<td>Trade, Theory and Practice—1</td>
<td>1/4</td>
<td>C 11</td>
<td>C. O’Byrne</td>
<td>199, 200</td>
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<tr>
<td><strong>SECOND YEAR:</strong></td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Plane and Solid Geometry</td>
<td>1/4</td>
<td>B 17</td>
<td>R. Grimes</td>
<td>135, 136</td>
</tr>
<tr>
<td>Trade, Theory and Practice—2</td>
<td>1/4</td>
<td>C 11</td>
<td>C. O’Byrne</td>
<td>201, 202</td>
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</tbody>
</table>

Note.—On completion of the second year in this course, students transfer to the third year of the evening course (see page 37).
### PART-TIME DAY COURSE IN CABINETMAKING

<table>
<thead>
<tr>
<th>Subject</th>
<th>Day</th>
<th>Hour</th>
<th>Room</th>
<th>Teacher</th>
<th>Syllabus</th>
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<td>FIRST YEAR:</td>
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</tr>
<tr>
<td>Trade, Theory and Practice-1</td>
<td>Tuesday</td>
<td>9.0-12.30</td>
<td>C8</td>
<td>M. Murray</td>
<td>204</td>
</tr>
<tr>
<td>Do. do. do.</td>
<td>Wednes.</td>
<td>9.0-12.30</td>
<td>C8</td>
<td>M. Murray</td>
<td>204</td>
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<tr>
<td>Do. do. do.</td>
<td>Thursday</td>
<td>9.0-12.30</td>
<td>C8</td>
<td>M. Murray</td>
<td>204</td>
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<tr>
<td>Do. do. do.</td>
<td>Saturday</td>
<td>9.0-12.30</td>
<td>C8</td>
<td>M. Murray</td>
<td>204</td>
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<tr>
<td>SECOND YEAR:</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Trade, Theory and Practice-2</td>
<td>Monday</td>
<td>2.0-5.30</td>
<td>C8</td>
<td>M. Murray</td>
<td>205</td>
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<tr>
<td>Do. do. do.</td>
<td>Tuesday</td>
<td>2.0-5.30</td>
<td>C8</td>
<td>M. Murray</td>
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<tr>
<td>Do. do. do.</td>
<td>Wednes.</td>
<td>2.0-5.30</td>
<td>C8</td>
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<td>Do. do. do.</td>
<td>Thursday</td>
<td>2.0-5.30</td>
<td>C8</td>
<td>M. Murray</td>
<td>205</td>
</tr>
</tbody>
</table>

Note.—On completion of the second year in this course, students transfer to the third year of the evening course (see page 38).

### PART-TIME DAY AND EVENING COURSE IN COACHPAINTING

<table>
<thead>
<tr>
<th>Class No.</th>
<th>Subject</th>
<th>Day Classes</th>
<th>Evening Classes</th>
<th>Room</th>
<th>Teacher</th>
<th>Syllabus</th>
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</thead>
<tbody>
<tr>
<td>FIRST YEAR:</td>
<td>Workshop Drawing—1</td>
<td>1½</td>
<td>B 17</td>
<td>R. Grimes</td>
<td>166</td>
<td></td>
</tr>
<tr>
<td>Woodwork—1</td>
<td></td>
<td>3</td>
<td>B 22</td>
<td>R. Grimes</td>
<td>165</td>
<td></td>
</tr>
<tr>
<td>Metalwork—1</td>
<td></td>
<td>1½</td>
<td>D 5</td>
<td>O. Crotty</td>
<td>224</td>
<td></td>
</tr>
<tr>
<td>290 Trade, Practice—1</td>
<td></td>
<td></td>
<td>D 17</td>
<td>H. Dempsey</td>
<td>208</td>
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<tr>
<td>291 Trade, Theory and Drawing—1</td>
<td></td>
<td></td>
<td>B 27</td>
<td>P. O'Reilly</td>
<td>209</td>
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SECOND YEAR:       | Plane and Solid Geometry      | 1½          | B 17            | R. Grimes | 135, 136 |
| Woodwork—2       |                               | 3           | B 21            | R. Grimes | 226      |
| Metalwork and Welding |                          | 1½          | D 5             | O. Crotty | 225      |
| 292 Trade, Practice—2 |                       |              | D 17           | H. Dempsey | 210      |
| 293 Trade, Theory and Drawing—2 |       |              | C 2            | P. O'Reilly | 211      |

Note.—On completion of the second year in this course, students transfer to the third year of the evening course (see page 40).
SYLLABUSES OF SUBJECTS

1—MATHEMATICS—Elem. I


Bisections—lines and angles. Constructing angles equal to given angles. Isosceles and equilateral triangles. Study of circle. Plotting points; graphs. Sum of angles of a triangle. Identical equality; triangles. Parallels and parallelogram. Area: triangles and parallelograms. Ratio as applied to lines. Ratio as applied to sides of right-angled triangle. Tan., sin. of an acute angle. Tan. and sin. as multipliers. Angles in a semi-circle. Application; tan. and sin. Cos of an acute angle. Sq. on hypotenuse and applications. Solution of right-angled triangles from above. Two sides of triangles compared with third. External angle=sum of interior, etc. \((a+b)^2\) by diagram. \((a-b)^2\) by diagram. Height problems. Ratios and their reciprocals. Graph of \(\sin \theta\) to 90° Graph 2 cos. \(\theta\) to 90°

2—MATHEMATICS—Elem. II


3—MATHEMATICS—Inter. I

4—MATHEMATICS—Inter II


7—MECHANICS—Elem. I


8—MECHANICS—Elem. II


9—APPLIED MECHANICS—Inter. I


10—APPLIED MECHANICS—Inter. II


14—HEAT

The functional planning of simple buildings, including the following general types:

(i) Domestic—houses, flats, hotels.
(ii) Educational and Cultural—schools, libraries, art galleries, museums.
(iii) Recreational and Social—ballrooms, sports clubs and pavilions, parish halls, etc.
(iv) Commercial—shops and showrooms, offices, banks, post offices, restaurants, public-houses.
(v) Travel—rail and bus stations, garages and filling stations.

The fundamental principles of architectural aesthetics.

The major part of the class time will be devoted to the solution of design problems, involving the practical application of the above.

The principles of functional planning as applied to any of the general types of building encountered in ordinary practice. The planning of highly specialised industrial buildings is specifically excluded.

The principles of architectural aesthetics applied to the design of buildings.

The major part of the class time will be devoted to the solution of design problems, involving the practical application of the above.

Introduction: The principal materials used in the construction of a small house—bricks, stone, cement, sand, lime, mortar, concrete, wood, and slates; simple explanation of their composition, properties and uses. The principal elements of a small house—walls and partitions, floors, roofs, doors, windows and stairs. Outline of materials used and of types of construction.

Foundations: Purpose of foundations; “standard” concrete foundation; surface concrete.

Walls and Partitions: Common methods of walling—brick, stone, concrete block and mass concrete; purpose and principles of bonding; brick sizes; common thicknesses of brick walling; brickwork terms; stretcher bond; English and Flemish bond in 9”, 14” and 18” walls, with stopped and toothed ends; garden wall bonds; stone copings; brick jointing and methods of pointing; composition and gauging of mortars; horizontal D.P.C.s near ground level—their purpose and the materials commonly used; half-brick and concrete block partitions; principal characteristics of limestone, sandstone and granite; varieties of rubble and ashlar walling.

Floors: Simple joisted ground floors; wallplates on offsets and sleeper walls; joist sizes; boarding; fender walls and ground floor hearths; flooring round hearths; upper floors in timber; methods of carrying wallplates; joist sizes related to spans; herringbone and solid strutting; upper floor hearths; skirtings; ventilation of floors.

Roof Carpentry: Explanation of terms—pitch, span, rise, eaves, ridge, verge and gable; construction of lean-to, couple and collar braced roofs; treatment at eaves and ridges; lathing, boarding and sarking; king-post truss; ceiling joists.

Roofing: Sizes of slates; slate bonding; lap and gauge; head and centre nailing; treatment at eaves, ridges and verges; pitches of slated roofs.

Roof Drainage: Cast-iron eaves gutters and downpipes—standard sizes, fixing and jointing; hopper heads, swannecks, toes and bends.

Door and Window Openings: Door and window openers in brick walls—with square and rebated jambs; stone and concrete lintels; principle of arch; semi-circular and segmental arches in gauged brick, rough brick and stone; relieving arches; stone cills and thresholds.

Doors: Need for building up doors from small scantlings; framed, braced, ledged and sheathed doors; simple panelled doors moulded in the solid; door frames in walls and partitions, methods of fixing; plain linings and architraves; footblocks; methods of fixing feet of external door frames; saddles.

Windows: Wood casement frames and sashes—outward and inward opening; methods of fixing; simple cased frames and double
Varieties of Irish bricks available—their characteristics to ceilings. ' an meta at concrete; hearth timber joints and typical applications. ' the concrete.

...in SItU; arches; cills and thresholds in D

...was...labours on right-angled b...d...work in...side.

...blocks in walls and...Concrete in...Structural gauging, mixing and uses...P Ie...c...Walling...Fo...foundations: Wood...I 07-BUILDING

...to sashes; relative merits of different...varieties; sizes available: Use different kinds of soil.

...marbles; fixing...varieties...sandst...of...floors...W O..D...fixing...flue stacks; elliptical and pointed arches

...and uses; fireplace opes...and -...and...and...steel.

...French casements in wood; solid mullioned, single and double boxed venetian sash frames; metal casements and French doors ("Standard" and "Universal" sections) fixed direct to jambs and in wood frames; ventilating hoppers.

...Preparation of brick, stone and concrete surfaces for internal plastering; rendering, floating and setting on walls and on lathed partitions and ceilings; gauging of several coats; use of hair; plaster of paris; use of gauged plaster.

...Composition of oil paints; preparation of wood and iron surfaces for painting; priming concealed joinery; number of coats; drying and rubbing down; succession of operations.

108—BUILDING CONSTRUCTION: INTER. II

Basements: Waterproofing basements; ventilating underground floors.

Walling: Varieties of Irish bricks available—their characteristics and uses; fireplace opes and flue stacks; elliptical and pointed arches in brick and stone; patent slab partitions; quarrying and cutting building stones; weathering and discoloration of stonework; characteristics of principal Irish building stones and marbles; fixing stonework to steel.
Concrete and Structural Steelwork: Machine mixing of concrete; patent concrete flooring systems; steel roof trusses and purlins; details of "factory" type roofs; fire resistance of buildings and materials; reinforced concrete—methods in common use for beams and floors.

Pavings, and Wall Linings: Brick, concrete and tile pavings; glazed wall tiling; quarry tiles; encaustic tiles; enamelled glazed tiles.

Wood: Growth, conversion, seasoning and defects of timber.

Temporary Carpentry: Centres for arches (exclusive of framed centres), fixing and easing; casing for mass concrete walling; moulds for pre-cast concrete work; shuttering for concrete floors and roofs; casings for lintels, beams and columns; erection and removal of concrete formwork.

Wood Floors: Parquet and woodblock floors; matwells.

Wood Roofs and Ceilings: Queen post and composite trusses; pitched roofs over complex plans; roof lights; fibrous plaster slabs in ceilings—sizes, fixing and jointing.

Partitions: Fibrous plaster slabs on partitions.

Roofing: Varieties of slates in general use in Ireland—their characteristics, sizes, covering capacity; composition and manufacture of roofing tiles—clay, concrete and asbestos cement; pantiles and interlocking tiles; torching and rendering; flashing to roof lights; lead covering to wood and stone cornices, etc.; plumbing to pipes passing through roofs; bituminous felt roof coverings, treatment at upstands and cesspools; tarmacadam finishes; asphalt coverings on concrete and wood; corrugated iron and corrugated asbestos-cement roofs; roof pitches for different coverings.

Stairs: Dog-legged and open well wood stairs, with open and solid balustrades; stone stairs—straight flight, dog-legged and open well—with spandril and rectangular steps.

Doors: Flush doors; double margin doors; glazed doors; swing doors; diminished stile doors; garage doors; gates; usual locks and furniture; floor-spring hinges.

Windows: Pivot-hung wood sashes; composite wood windows with mullions and transomes; usual window locks and fastenings (for wood and steel windows); fansash openers.

Screens: Transome and side framing; glazed screens.

Trimmings: Splayed jamb and soffit linings; framed and panelled linings; dado rails and dado panelling; picture rails.

Water Services: Principles of hot water circulation; domestic hot and cold supply; primary and secondary circulations; coal and coke boilers.

Sanitation and Drainage: Domestic sanitary fittings; soil and vent pipes; waste and anti-syphonage pipes—materials, common sizes, fixing and jointing; principles of drainage; sizes of pipes and falls; excavation and boning-in; concrete beds; laying and jointing stoneware pipes; junctions and manholes; connection to sewer, disconnecting trap; gulley traps; ventilation of drains; testing by smoke and water.

Plasterwork: Composition of fibrous plaster slabs; finishing slabbed surfaces; composition of patent plasters and use of hard plasters on walls and ceilings; salient angles, jambs and dadoes; external wall renderings in cement.

Painting: Painting on plastered surfaces; water paints; size; treatment of ceilings.

Glazing: Common varieties and weights of plate and sheet glass used for window, door and skylight glazing; glaziers' putty; glazing wood and steel sashes, with putty and movable beads; patent roof glazing.

109—BUILDING CONSTRUCTION: ADV. I

Foundations: Reinforced concrete slab, pile and raft foundations.

Brickwork and Masonry: Brick footings; reinforced brickwork; cavity and composite walls; brick and tile cornices and corbels. Stone columns, solid and hollow; bases and capitals; built-up cornices, entablatures, pediments; stone chimney stacks, finials, crosses, porch roofs, and tracery windows; stone and marble fireplaces; stone and marble slabbing to brick and concrete walls; adding new work to old; treatment of damp walls.

Concrete and Structural Steelwork: Concrete construction joints; expansion joints in walls, floors and roofs; reinforced concrete-framed buildings, stairs and roof trusses; retaining walls in mass and
reinforced concrete. Steelframe construction; welded structural steelwork; steel stanchions, caps, bases and connections; plated and built-up sections; concrete casing of steel-frame buildings.

Temporary Carpentry: Shoring and underpinning; timber and steel scaffolding; staging; framed centres for arches.

Roofs: Belfast and other forms of open timber roof truss; dormer windows (including plumber’s work); steel skylights and lanterns.

Stairs: Planning and construction of geometrical stairs.

Doors: Sliding doors and sliding door gear.

Partitions: Folding and sliding partitions.

Windows: Factory, hospital, and sliding and folding types of metal window; locks and fastenings for metal windows.

Furniture: Presses, lockers, dressers, drawers, and counters.

Water Supply: Wells, pumps and water storage; water softening; water heating by gas and electricity.

Drainage and Sanitation: Cast-iron drains; drains under buildings; inspection shoes and chambers; pumps in drainage schemes; one pipe system; grease traps, septic tanks, chemical closets; asbestos cement, rainwater ware.

Metalwork: Metal cills, linings and architraves; simple gates, railings, grills, balustrades and handrails in wrought-iron, cast-iron and bronze; construction and fixing.

111—SPECIFICATIONS AND MATERIALS

Brickwork and Masonry: Manufacture, characteristics and uses of clay, concrete, sandlime, glass, glazed and fire bricks; practical tests of bricks; varieties and properties of common marbles; cast stone; polished granite and limestone; tests of building stones; decay, preservation, restoration and cleaning of stonework.

Concrete: B.E.S.A. standards; varieties of cement and their uses; white sands; colouring cement finishes; surface finishes to concrete (other than renderings); prevention of cracking and dusting in concrete pavings, surface and integral waterproofing processes.

Pavings, Floorings, Stair Coverings and Wall Linings: Terrazzo and mosaic; stone and marble; rubber sheet, rubber tile, linoleum and cork tile; terracotta and faience.

Timber: Plywood and laminated boards.

Roofing and Roof Plumbing: Glass tiles; manufacture and general uses of lead and copper.

Painting: Properties and uses of the common bases, vehicles, solvents, driers and pigments; matt and gloss finishes; varnishes and enamels; water, oil and spirit stains; french polishing; oil and wax polishing; cellulose and bituminous and metallic paints; spray painting.

Glazing: Composition and manufacture of glass; properties and applications of wirewoven, armourplate, ultraviolet, and safety glass; pavement lights; concrete glazing; lead and copper glazing.

Specification: Simple specifications of the following in small domestic buildings: concrete; brickwork; drainage; masonry; roofing; carpentry and joinery; plaster work; plumbing; glazing; painting.

112, 113, 114—HISTORY OF ARCHITECTURE I, II, III

(a) Factual

History of the development of Architecture from the earliest records down to the present day; the historical styles—Egyptian, West Asiatic, Greek, Roman, Byzantine, Romanesque, Gothic, Renaissance, Georgian; nineteenth and twentieth century architecture in Europe and America. Study of historical buildings, illustrating this development, comparison of similar features in different styles and of the solutions of similar problems in different periods.

(b) Analytical

Analysis of the development of structure, of the functional plan and of aesthetic expression throughout the historical periods; the interdependence of these developments, the religious, social, political and technical influences that shaped their development; the historical significance of “style”; the causes that led to recurrent periods of greatness and of decadence.

115, 116, 117—FREE DRAWING I, II, III

Drawing of objects, involving a knowledge of the principles of foreshortening displayed in the representation of cylindrical, conical

121—MECHANICS: ELEM.

Forces acting on a rigid body; composition and resolution of forces in one plane; equilibrium of forces; triangle and polygon of forces; principle of moments; couples; reactions of beams; centre of gravity; centre of area; simple machines; efficiency of machines.

Laws of motion; force, mass and acceleration; momentum; potential and kinetic energy; work; power. Hydraulic pressure; total pressure on an area; centre of pressure.

124—STRENGTH OF MATERIALS AND THEORY OF STRUCTURES: INTER.

Strength of Materials

Stress and strain; Hooke's law; modulus of elasticity; Poisson's ratio; strain energy; stress-strain diagrams; elastic limit and yield point; effect of repetition and reversal of stress; fatigue of materials; stresses due to dead, live and impulsive loads. Shear stress and strain; shear modulus; graphical and analytical determination of shear in cantilevers and beams.

Theory of bending; neutral axis; internal stresses in beams; graphical and analytical determination of bending moment in cantilevers and beams; moment of resistance; moment of inertia; section modulus; deflection of beams and cantilevers. Short columns; combined bending and direct stress; radius of gyration; critical load for slender columns with axial and eccentric loading. Ultimate strength and working stresses of mild steel, wrought-iron and cast-iron.

Selection of steel and timber sections for stanchions, beams and cantilevers.

Theory of Structures

Stress diagrams for statically-determinate plane frames; deficient, simply firm, and redundant frames; wind pressure on frames; strength of rivetted joints.

Stability of walls; line of thrust and pressure on foundations. Earth pressure; stability of gravity retaining walls.

125—STRUCTURAL ENGINEERING: ADV.

Weights of structural materials; design loads for structures.

Design of


126—CONCRETE: PLAIN AND REINFORCED


127—PHYSICS (HEAT)

Thermometry; quantity of heat; specific heat; latent heat; conduction; convention and radiation; reflection of radiant heat;
thermal conductivity and thermal resistance; thermal resistance of
common building materials; air-to-air heat transmission co-efficient;
absolute and relative humidity of air; dew point and condensation;
expansion of solids, liquids and gases; co-efficients of thermal
expansion; gravity circulation in hot-water systems.

128—PHYSICS (ELECTRICITY)

Nature of electric current; conductors and insulators; flow of
D.C. in a conducting circuit; voltage, current and resistance; units;
Ohm's law; power; kilowatt hour; series and parallel resistances—
distribution of voltage, current and power.

Heating effects; electric fires; incandescent lamps; fuses; carrying
capacity of cables. Primary and secondary cells; cells in series and
parallel.

Magnetic effects; electro-magnet; electric bell, electro-magnetic
induction; principle of motor and generator; alternating current;
frequencies of commercial supply; principle of transformer, voltage
and current ratios; advantages of transmission at high voltage;
voltmeters and ammeters.

129—PHYSICS (SOUND)

Nature of sound, propagation; relation between wave-length,
velocity and frequency; range of audible frequencies and correspond­
ing wave-lengths; transmission through air and solids; pitch, tone
and loudness; harmonics; effect of harmonics on tone; vibrating
strings; resonance; organ pipes; absorption, reflection and dispersion,
effect of hardness, porosity and roughness of surfaces; echo and
reverberation; differential reflection, absorption and transmission of
different frequencies; selective absorption of harmonics; “open
window” unit of absorption; standing waves and interference
phenomena; ratio of acoustic energy to sensation of loudness at
different frequencies; unit of “equivalent loudness”—the phon;
sound insulation of a wall; the decibel; average sound reduction
factor; Sabine's formula; sound shadows.

130—PHYSICS (LIGHT)

Nature of light; propagation; shadows; the “standard candle”;
foot-candle, lumen; photometry; “equivalent brightness” glare;
reflection and refraction; dispersion; lenses, prisms, plane and para-
bolic mirrors; the spectrum and the theory of colour.

131—CHEMISTRY

Chemical and physical changes. Compounds and mixtures.
chemical affinity, chemical action, catalytic agents. The elements,
symbols, metals and non-metals. Solution and suspension, precipita­
tion, distillation, crystallisation. Oxygen, oxides, combustion,
oxidation and reduction. Acids, bases and salts. Hydrogen, the
chemistry of water. Laws of chemical combination, atoms and mole­
cules, atomic weights. Chemical formulæ and chemical equations;
quantitative significance. Chlorine; hydrochloric acid; chlorides.
Brief study of other halogens. Nitrogen, ammonia, nitric acid,
nitrates, oxides of nitrogen. Sulphur, hydrogen sulphide, oxides of
sulphur, sulphurous and sulphuric acid and their salts. Carbon,
allotropic forms, oxides of carbon, carbonates. Manufacture of coal-
gas. Iron and its oxides, reduction of ores. Calcium and magnesium,
their oxides and carbonates, limestone, quicklime, slaking and set­
ting; calcium sulphate, gypsum plasters. Silicon, silica, silicates;
aluminium, alumina, aluminates. Sodium and potassium, their
oxides and hydroxides. Impurities of natural waters, hard and soft
waters, purification and softening of water. The atmosphere, respi­
ration, pollution, acid impurities.

132, 133, 134—SURVEYING AND LEVELLING I, II, III

(a) Chain Surveying

Use of 100 ft. and 66 ft. chain; use of surveyor's tape; ranging
a line; ranging past obstacles; chaining on level and sloping ground;
fixing points relative to a chain line; selection of stations and survey
lines; booking a chain survey; causes of error, precautions, checks;
permissible error; plotting the chain survey.

(b) Theodolite Surveying

Construction of the theodolite; temporary and permanent adjust­
ments; reading horizontal and vertical angles; ranging a straight
line; triangulation survey; selection of stations; finding the distance
between inaccessible points; determination of heights with a theo-
dolite; booking the survey; causes of error, precautions, checks; permissible error; plotting the survey.

(c) Levelling
Construction of the surveyor's level; three and four screw levelling plates; the staff; temporary and permanent adjustments; continuous levelling; selection of datum; appropriate lengths of sight; selection of change points; checking by closing circuit; levelling on a steep slope; reading the level of an overhead point; booking and reducing levels by rise-and-fall and by collimation method; causes of error; precautions, checks; permissible error; plotting sections and contours.

(d) Areas and Volumes
Calculation of areas; use of planimeter; calculation of earthwork quantities.

(e) Ordnance Maps
Scales; use and interpretation of ordnance sheets; conventional signs; ordnance datum; benchmarks; spot levels; contours.

135—PLANE AND SOLID GEOMETRY: ELEM.
Construction and use of scales; plotting of angles by protractor; division of lines in given proportions; measurement of angles in degrees; construction of a triangle from given data; construction of polygons; similar figures; enlarging and reducing figures by radial projection; areas of triangles, polygons and curved figures; construction of circles from specific data; tangents; methods of defining positions in space of points, lines and planes; horizontal and vertical projections; horizontal and vertical traces; inclination of lines and planes to planes of projection; projection of prism, pyramid, regular tetrahedron; sphere; right circular cylinder and cone.

136, 137—PLANE AND SOLID GEOMETRY: INTER. I, II
The ellipse, normals, and tangents; construction of arches and mouldings. Geometric design based on regular polygons; tracery design. Rectangular, oblique and circular surfaces in isometric and oblique projections. Oblique planes and their intersection; bevels for splayed soffits, jamb linings, hoppers, hip and valley roof members for roofs of regular plan; dihedral angles. Sections of raking mouldings over square plans. Simple problems on the inter-penetration of solids, including prism, pyramid, cylinder, cone and sphere. Developments of curved soffits in straight walls, ribs in groins, domes, niches and pendentives. Development of strings of geometrical stairs.

140—PERSPECTIVE AND SCIAGRAPHY
Shadows: Definition of traces of lines. Determining traces of lines in vertical, horizontal and auxiliary planes. Cast shadow of lines on vertical and horizontal planes when given direction of plan and elevation of light ray. Cast shadow of planes, including circular surfaces on horizontal, vertical and auxiliary planes. Cast shadow of solids, including circular solids on horizontal, vertical, auxiliary planes. Perspective: Definition of the various terms. Use of parallel, "School of Art," and architectural method. Representing in parallel perspective the following: square, circle and polygonal shape on ground plane and horizontal. Perspective representation by architectural method of geometrical solids. Relation of groups of geometrical solids to outline shape of buildings. Representing to given scale in architectural perspective buildings conforming to simple geometrical solid shapes.

141—BRICKLAYING AND MASONRY: PRACT. (ARCHITECTURE COURSE)

142—CARPENTRY AND JOINERY: PRACT. (ARCHITECTURE COURSE)
Object: To provide practical instruction in the methods and materials used in construction of the usual pieces of work in carpentry
and joinery. Method: Instruction in the making and proportioning of the four fundamental joints leading to group work on the following articles of joinery: Door frame details, simple roof details, including example of hipped roof, panel door construction, sashes and frames (casement and sliding) from prepared material. Simple staircase details.

143—PLUMBING: PRACT. (ARCHITECTURE COURSE)

Roofwork: Exercises in the working of sheet lead. Bossing external and internal corners for gutters; forming lead soakers, lead aprons and back gutters, ridge rolls and cesspool boxes. Setting out single step and herringbone flashing. Roof leadburning by the oxy-acetylene flame. Simple copper roofing joints, rolls, and welts.


144, 145—DRAUGHTSMANSHIP: PLAN DRAWING I, II

Materials and instruments of draughtsmanship; scales and their application to maps and plans; setting out and presentation of various types of drawings; lettering and dimensioning; conventions of architectural draughtsmanship; orthographic and isometric projection; standard drawing office practice; methods of enlarging, reducing, photo-copying and printing; practice in the preparation of sketch plans and working drawings from rough sketches; tracing in pencil and ink; plotting surveys of lands and buildings.

146—MENSURATION AND TRIGONOMETRY I

Mensuration: Lineal, square and solid measures. The mensuration of lines, such as perimeters and diagonals of common figures. The calculation of areas. The contents of solid bodies. The application of the principles of mensuration to problems met with in professional practice, such as rainfall, drainage, ventilation, earthwork and builders' work. Trigonometry: The elements of the subject so far as required for simple land surveying. Plane trigonometry applied to the mensuration of heights and distances. The nature and use of the common system of logarithms.

147, 148—BOOK-KEEPING: ELEM. I, II

The meaning and object of book-keeping; single and double entry. Opening entries; cash book, ledger, division into groups of accounts, day book, purchases book, returns books, bill books and journal; posting to the ledger; the trial balance; closing the ledger. The trading account, profit and loss account, and balance sheet; gross and net profits; assets, liabilities and capital. Simple partnership accounts. Income and expenditure accounts. Receipts and payments accounts. Banking; current and deposit accounts; definition and use of cheques, bills of exchange and promissory notes.

149, 150—ECONOMICS I, II


151, 152—LEGAL SUBJECTS I, II

Central Government.—The nature of the Eire Constitution. The position of the President with regard to the executive, the legislature and the judiciary, and the relations of these to each other. The liberty of the subject. Parliament. The composition of the Senate and of the Dail. The Parliamentary session; opening, prorogation, dissolution. Legislative procedure; kinds of Bills and their passage through Parliament. Legislation by Provisional and Statutory Orders. Parliamentary control of taxation; the Budget and Finance
Act. The Executive Council, Ministry and State Council. The more important Government Departments and their principal duties, especially those most affecting the profession of surveyor. The legal system; Common Law, Statute Law and Equity; legal and equitable remedies. The principal courts of record (superior and inferior) and an outline of their civil jurisdiction.

Local Government.—The Local Authorities and their areas; principal powers and duties; bye-laws; methods of acquiring additional powers; chief sources of income. A general knowledge of the administration of the following services and the responsible authorities: public health, highways, town and country planning, housing, small holdings and allotments, land drainage. The supervision and control of Local Government by the State.

Ownership and Possession.—The legal conception of, and distinction between, “ownership” and “possession.” The subject matter of ownership; “res nullius.” Absolute and limited ownership. Possession of land. Classification of Property.—The difference between real and personal property. Corporeal and incorporeal hereditaments. Tenure.—The historical evolution (in outline) of freehold, copyhold and leasehold. The abolition of copyhold (excluding details relating to the extinguishment of manorial incidents).

Estates and Interests in Land.—The chief characteristics of the following freehold and leasehold estates and interests:—fee simple (absolute), fee tail (including details concerning the mode and effect of barring entails), tenancies for life and for terms of years, with particular attention to the tenant’s rights of enjoyment and liability for waste. The meaning of “reversion” and “remainder.” The distinguishing characteristics of joint tenancy and tenancy in common.

Transfer of Land.—The nature of the transactions of sale, lease and mortgage (in outline). The object and effect of a strict settlement of land (in outline, and excluding particulars of the vesting of the legal estate and of the detailed provisions of the trust instrument).

Contract.—Nature and formation of contract; contracts under seal and simple contracts; expressed and implied contracts; offer and acceptance; options to purchase; doctrine of consideration; meaning of “void,” “voidable” and “unenforceable.” Proof of contracts for sale or other disposition of land and for sale of goods; doctrine of part performance. Contractual capacity of infants and corporations. Nature of “mistake,” “fraud” and “misrepresentation”—their effect on a contract; difference between “conditions” and “warranties.” Different ways in which a contract may be discharged. Assignment of contract. Remedies for breach of contract. Agency—express, implied and inferred. The agent’s authority; ratification; rights and duties between principal and agent; liability of principal and agent to third parties; determination of agency. Master and servant; contractual rights and duties in outline.

Tort.—Nature of and general principles of liability in tort. Definition of and remedies for trespass, dispossession, nuisance (public and private), negligence, fraud and conversion. Liability of an employer for the torts of his servant or an independent contractor; liability of a master for injuries to his servant (in outline). Liability of a principal for the torts of his agent.

153—QUANTITIES: INTER.

Squaring dimensions. Abstracting and working up abstracts. Writing bills of all trades. Measurements and taking-off of dimensions from drawings of earthwork, foundations, drainage, brickwork, slating and roof tiling, carpenter’s and joiner’s work, founder and smith’s work, external plumber’s work, plastering, glazing and painting. Proper use of side-casts on waste and their application; a good order of taking dimensions; accuracy in measurement; correct application of mensuration to the measurement of irregular surfaces and bodies; to base their descriptions upon the specification notes given, and to show a general knowledge of constructional detail.

154—QUANTITIES: ADV.

Extension of the syllabus for Quantities (Intermediate) to show a working knowledge of the Standard Method of Measurement and the principles of “taking-off,” as indicated therein, in their application to the measurement of all types of building work normally encountered, including temporary work, shoring, site works and demolition.
155—LEGAL SUBJECTS III

Public Health and Local Government Acts.—The Public Health (Ireland) Acts, 1878 to 1919; the Local Government (Ireland) Acts, 1898 to 1919, and the Local Government (Adaptation of Irish Enactments) Order, 1898; the Acquisition of Land (Assessment of Compensation) Act, 1919; the Local Government Acts, 1925 and 1927, 1941 and 1946, in so far as they relate to the following matters:

- Sewerage and drainage; disposal of sewage; privies and water-closets; water supply; nuisances; public roads and streets, including private streets; pleasure grounds; purchase of land, arbitrations and by-laws.


Building Contracts.—Building Contracts generally; their nature, formation and construction. The parties to building contracts and the persons connected therewith. The standard forms of building contract and sub-contract. The rights of building owners, adjoining owners and third parties. The usual procedure in building works. The principal statutes and case law affecting building contracts.

Law of Dilapidations.—The meaning of dilapidations; liability for dilapidations. The meaning of waste; legal and equitable waste; liability for waste. Implied and statutory obligations to repair between landlord and tenant; obligation under express contract; interpretation of covenants to repair; meaning of “fair wear and tear.” The effect of assignment of term or reversion upon liability to repair. Liability of executors. Landlord’s remedies for breach of covenant to repair; notices to repair; interim schedules; schedules at end of leases; measure of damages. Liability for works required and charges made by local authorities. Dangerous structures. Party-walls. Fences. Liability for injuries to third parties; liability of owner and occupier to persons coming on to the premises, to persons using the highway and to adjoining owners. Statutory provisions and cases of importance to surveyors relating to dilapidations, waste and repair in respect of urban properties.

156—MECHANICAL DRAWING: ELEM.

Use of drawing instruments; division of lines; scales; setting out angles and measurement of angles by protractor; plane rectilinear figures; circles and tangents; construction of geometrical patterns. Principles of projection; orthographic projection; isometric projection; oblique projection; setting up orthographic; isometric and oblique projections from dimensioned sketches or by measurement from simple objects.

157—BRICKLAYING: PRACTICE 1


158—BRICKLAYING: THEORY AND DRAWING 1

The tools commonly used by the bricklayer, the materials, bricks, sand, lime and cement, types in use and simple tests. Bond, meaning, etc. Bonding of walls and quoins in English, Flemish and other bonds. Purpose of and construction of foundations and footings, their width, depth and width. Damp-proof courses, materials, position and precautions in laying. Cavity walls, use of tie irons, etc., simple fire opes, openings for doors and windows with square and recessed jambs. Drains, pipes and joints. The preparation for and setting of floor tiles. The setting out and construction of relieving arches.

159—BRICKLAYING: PRACTICE 2

160—BRICKLAYING: THEORY AND DRAWING 2
Special cutting tools used by the bricklayer. Outlines of the manufacture of limes, cement and bricks. Bonding of walls, quoins, junctions, breaks and piers in the various bonds. Jointing and pointing brickwork. Footings to walls, quoins and breaks with walls of various thicknesses. Damp-proof courses and vents under floors. Openings in walls to maintain bond, broken bond. Cills and lintels of stone and concrete. Drains, gullies and intercepting traps, gradients and inspection chambers. The square, segmental and semi-circular axed arches, skewbacks, summering points and methods of setting out.

161—BRICKLAYING: PRACTICE 3
Bonding and building in any bond; square and splay quoins; breaks, pilasters and plinths. Setting out, cutting and building moulded segmental and gothic arches in opes with recessed and splay jambs. Preparing for and setting open and close ranges, principles of setting, etc. Walls of bricks and concrete blocks. Wall tiling.

162—BRICKLAYING: THEORY AND DRAWING 3
General bonding practice to include isolated and attached piers, square and splay quoins in any bond. Moulded segmental arches, mitres, stops, etc. Gothic arches, methods of setting out, treatment of the joints, cills and heads of the opes. Opes with square, recessed and splayed jambs. Cavity construction; concrete ingredients and proportions; concrete blocks; cills and lintels; casting and setting. Drains; intercepting chambers and cascades.

163—BRICKLAYING: PRACTICE 4
Bonding and building more advanced examples of brickwork. Setting out, cutting and building bulls-eye, ellipse and trumpeter arches; arches of double curvature. The niche for plastering; the gauged niche, corbels and weathering of offsets.

164—BRICKLAYING: THEORY AND DRAWING 4
General bonding, more advanced examples in any bond. Setting out of ellipse and other arches. Arches of double curvature. The niche hood, gauged and for plastering. Shoring and underpinning.

168—CARPENTRY AND JOINERY: THEORY AND DRAWING 1

Timber: growth, structure, conversion, seasoning, diseases and defects. Mouldings and their application in architraves, cornices, skirtings, etc. Construction and use of scales. Panelled doors and door frames; inward and outward opening casement windows; vertically sliding sashes in cased frames; hanging, fitting and hinging of doors and sashes; door and window trimmings. Joisted floors: construction and listing of materials. Carpentry and joinery joints. Setting out of arches. Simple roofs; ridge and eaves details. Moulds for concrete cills; simple forms of turning pieces, rib and built-up centres. Straight-flight stairs; details of simple curved steps. Glossary of technical terms used in carpentry and joinery work.

169—CARPENTRY AND JOINERY: PRACTICE 2


170—CARPENTRY AND JOINERY: THEORY AND DRAWING 2

Further details of casement windows and vertically sliding sashes in cased frames. Types of panelled doors; marking of tenons and listing of material; framed, braced and sheeted doors; flush doors. Further details of fixing, fitting and trimmings to internal and external doors. Further details of single floors; trimming for openings and hearths. Development of roof surfaces; bevels for rafters, hips and purlins. Details of eaves and gutters; king-post and queen-post trusses. Construction, striking and easing of built-up centres. Moulds for concrete stair steps and window sills; formwork for simple panelled concrete work. Simple timbering to excavations; simple shores. Enlarging and diminishing of mouldings; intersection of raking and horizontal mouldings; intersection of straight and curved mouldings on plan. Bevels for splayed jamb linings and soffits. Pivot hung sashes. Construction and setting out of stairs; simple handrail, easings, ramps and quadrants. Glossary of technical terms used in carpentry and joinery work.

171—CARPENTRY AND JOINERY: PRACTICE 3

Setting out and construction of:—Triangular louvre frame; circular-headed door-frame, embodying hammer-head key joint and handrail bolt joint; straight-flight stairs with close string; glazed door with gunstock stile; solid, moulded, curved door head; scale model of king-post truss.

172—CARPENTRY AND JOINERY: THEORY AND DRAWING 3

173—CARPENTRY AND JOINERY: PRACTICE 4
Setting out and construction of:—Stairs with quarter space of winders; hipped roof; moulds for concrete cills; shoring; church seats.

174—CARPENTRY AND JOINERY: THEORY AND DRAWING 4

175—WOODCUTTING MACHINISTS' WORK: PRACTICE 1

176—WOODCUTTING MACHINISTS' WORK: THEORY AND DRAWING 1

177—WOODCUTTING MACHINISTS' WORK: PRACTICE 2

178, 180—WOODCUTTING MACHINISTS' WORK: THEORY AND DRAWING 2, 3

179—WOODCUTTING MACHINISTS' WORK: PRACTICE 3
Cutter grinding for square block setting out. Advanced work on lathe. Tenoning and double scribing. Jig sawing and moulding tracery panels. The setting and grinding of spur and adze cutters.
for tenoning machine. Advanced spindle work; french head, square block and collars. Preparation of jigs and templates.

181—WOODCUTTING MACHINISTS' WORK: PRACTICE 4

182—WOODCUTTING MACHINISTS' WORK: THEORY AND DRAWING 4

183—PLUMBING: PRACTICE 1
Setting out and preparing sheet lead, bossing of corners and breaks up to 4" high. Sheet lead bossing of roll ends, welts, and other simple roof details. Preparation of lead pipe for wiping of soldered joints in an underhand, branch, upright and flange position on water and waste pipes up to 2" diameter. Wiping of soldered joints on lead pipes up to 1" in diameter with and without the use of a blow-lamp. Tinning of plumber's brasswork by means of a copper bit. Bending of lead pipes up to 1½" diameter by means of sand, spring, bobbins, or other workshop methods. Bossing of knuckle bends on pipes up to 1½" diameter. Bending of ½" and ¾" light gauge copper tube to form simple bends and offsets by means of sand, spring, or machine. Jointing of ½" and ¾" light gauge copper tube by means of compression or capillary couplings. Re-washing and adjusting of bibcocks, ball-valves, and similar appliances.

184—PLUMBING: THEORY AND DRAWING 1
Metals used in plumbing: lead, copper, zinc, iron, tin, etc. Purposes for which they are used. Specific gravities, melting points. Chief ores. Alloys—hard and soft. Properties, composition, preparation, and making of solders for various purposes. Purification of solder. Brass and gunmetal fittings. Fluxes for soldering lead, copper, zinc, tin, iron, etc. Lead—chief ores; mining and smelting; pig lead; chemical lead. Manufacture of lead water and waste pipes; weights, lengths, and diameters. Manufacture of milled and cast-sheet lead; advantages; weights and thicknesses. Physical properties and applications of lead; lead oxides; red and white lead. Copper; chief ores; physical properties. Manufacture of copper tube, gauges, lengths and diameters. Manufacture of sheet copper. Hot rolled copper for roofwork; gauges and weights. Physical properties and uses of zinc, tin, and other metals for use in plumbing work. Soldered joints for connecting lead pipes. Round, branch, flange, taft, and other wiped soldered joints. Wiped soldered seams on lead-lined tanks and cisterns; soldered cracks in gutters. Joints for light gauge copper tube. Compression joints. Screwed and sweated joints for heavy gauge copper tube. Capillary joints for light gauge copper tube. Bending and jointing copper tubes. Couplings, sockets, tees, etc., for connecting wrought-iron or mild steel pipe. Cutting, bending, and jointing wrought-iron, gas, water, and steam tube. Joints for cast-iron soil and cast-iron or steel water pipes. Cutting and jointing cast-iron pipes. Cements used by plumbers—Portland cement, Keene's cement, Plaster of Paris, etc. Plug and full-way valves; pillar and bibcocks; globe cocks for use on water and gas supply mains. Calculations of sizes and weights of sheets and pipes of various metals. Calculations involving capacities of tanks, cylinders, pipes, etc. Areas and volumes of spheres, cones, etc. Simple plans, sections, and elevations of plumbing works and appliances.
185—PLUMBING: PRACTICE 2

Bossing of breaks and corners in sheet lead up to 4" high. Bossing and dressing of steps, rolls, single and double welts, aprons, flashings, soakers, and saddles. Bending light and heavy gauge copper tube up to 1" diameter by means of sand, spring or machine, to form simple bends and offsets. Bending of 2" diameter lead water and waste pipes by different workshop methods. Preparation, fixing, and wiping of soldered joints on, lead up to and including 2" diameter. Bossing of lead waste pipe up to 2" diameter to form knuckle bends. Bending of wrought-iron steam tube up to 1" diameter by the use of a forge fire or other workshop method, to form simple bends. Setting out and jointing of hot rolled sheet copper to form simple single and double welts, rolls, drips, and standing seams. Lead burning. Connecting up and regulating of a modern high pressure oxy-acetylene lead-burning plant. Preparation and burning of flat lap or butt joints up to 18" long on sheet lead. Installation of copper and lead water supply pipes, involving the use of couplings, holderbats, soldered joints, pipe hooks and clips, etc. Cutting and screwing of copper and iron pipes up to 1" diameter. Installation of boiler and cylinder couplings, dip pipes, tank connections, etc. Simple leading and jointing of cast-iron soil pipes.

186—PLUMBING: THEORY AND DRAWING 2

Hard and soft waters; effects on pipes and fitting. Water supply for domestic use; supply pipes from main to house, street ferrule, and stopcock. Pipes for water supply; advantages and disadvantages of lead and copper pipe for underground and overground use. Frost bursts; maximum density of water; precautions to be taken. Ball-valves; high and low pressure valves; Croydon and Portsmouth patterns. Equilibrium ball-valves for very high pressures; types of copper floats. Corrosion of pipes; protection by painting, galvanising, bower-barfling. Dr. Angus Smith's solution; vitreous enamelling. Electrolysis of metals; effects on plumbing work. Roof leadwork; preparation for lead; single and double welt joints, steps, drips, rolls, secret tacks, and soldered dots. Expansion and contraction of lead gutters. Parapet and valley gutters. Capillary attraction in roofwork. Tools for sheet leadwork—their use and care. Weights and sizes of sheet lead. Roof copperwork; preparation required for laying sheet copper. Single and double welt joints; standing seams and drip edges; gauges and weights. Tools and appliances used for copper roofwork. Flashing of chimneys. Roofwork calculations. Lead burning—advantages over soldering; oxy-acetylene plant. Seams and joints used in leadburning on pipes and sheets. Domestic hot water systems, "Rolyat" and other patented systems. Circulation of water when heated. Conduction, convection, and radiation. Collapse of cylinders; use of dip pipes, drain cocks, etc. Measurement of heat; thermometers; British thermal unit; latent and specific heat. House drainage; materials used. Setting and jointing of iron or stoneware drains, foundations, and gradients. Connection to soil and vent pipes. Traps and appliances, armstrongs, etc. W.C. cisterns; bell and valve syphon patterns. Baths, basins, sinks, water closets, and other sanitary appliances. Meters, valves, etc., used on gas supply systems.

187—PLUMBING: PRACTICE 3

Setting out sheet lead and bossing internal and external corners up to 5" in height. Lining small cisterns and cesspool boxes. Wiping angle seams. Bossing of difficult rolls, saddles, gutter ends, etc. Wiping soldered joints in normal positions on lead pipes up to 3½" diameter. Wiping brass ferrules and thimbles on soil and waste pipes. Bending by means of bobbins, dummies, etc., pipe up to 3½" diameter. Bossing of knuckle bends on lead soil pipe. Leadburning of simple flat and sloping butt or lap joints. Lead-burned patches, etc. Burned joints on lead waste, soil, and water pipes. Jointing of brasswork to lead pipes by leadburning. Cutting, screwing, and jointing of 1½" wrought-iron pipe. Cutting, screwing, sweating and jointing of heavy gauge copper pipe up to 1½" diameter. Bending of wrought-iron steam tube up to 1½" diameter by forge fire or other workshop method. Bending of light or heavy gauge copper pipe to form angles, offsets, etc. Welding of wrought-iron or mild steel tubing by oxy-acetylene flame. Welding of butt and branch joints in normal positions on pipes up to 1½" diameter. Bronze welding and brazing of copper pipes up to 1½" diameter. Setting out and construction of sheet copper back gutters, aprons,
flashing, soakers, rolls, clinks, and gusset pieces. Cutting and jointing of cast-iron soil and vent pipes in all normal positions. Erection of W.C. cisterns, tanks, etc.

188—PLUMBING: THEORY AND DRAWING 3


189—PLUMBING: PRACTICE 4

Bossing sheet lead to form all kinds of corners, breaks, drips, saddles, cesspool boxes, etc., up to 6" high. Preparation, fixing, and wiping of soldered joints on lead pipe up to 4" diameter. Joints to be wiped in all normal positions. Preparation and wiping of soldered seams, flanges, and angles in cisterns, cesspool boxes, etc. Preparation and leadburning of horizontal and upright seams on sheet lead with butt or lap joints. Leadburning of tees, elbows, cup, and other joints on lead waste and soil pipes. Welding wrought-iron or mild steel pipe with the oxy-acetylene flame. Formation of butt, flange, and branch joints, etc. Cutting openings for branches, etc. Use of oxy-acetylene cutter. Brazing and bronze welding of copper tube up to 3" diameter, to form cup, saddle, and slip joints, etc. Bending of wrought-iron or mild steel pipe up to 2" diameter by means of forge fire, etc. Bending of copper pipe up to 2" diameter by the usual workshop methods. Erecting of soil and vent pipe layouts, involving exercises in cutting and jointing cast-iron heavy-coated pipe. Exercises in sheet copper, involving the use of standing seams, clinks, rolls, drips, gutters, aprons, etc. Clinks and joints used on sheet zinc.

As far as possible, the above exercises will be carried out under the same conditions as would exist on an actual job, so as to give the student a practical knowledge of the working methods adopted.

190—PLUMBING: THEORY AND DRAWING 4

Sanitation and drainage. Fixing soil, waste, and anti-syphon pipes on the one and two pipe systems. Venting. Soil and waste pipe layout for large buildings. Local bye-laws. Testing drains by smoke, water, and chemicals. Small sewage disposal plants for country houses. Simple pervious and impervious cesspools. Septic tanks; working principles; anaerobic and aerobic bacterial action; construction of small tanks, filter beds, etc.; scum boards; disposal of bath wastes in septic tank systems. Hot water supply. Electrical

191—PLUMBING: PRACTICE 5

The work in this section will be so arranged as to allow the student to concentrate on branches of the trade, in which he may not get sufficient training in his daily work. It will, in general, be a revision of the work of former years, but of a more advanced nature. It will also give the student an opportunity to keep up with modern trade trends, especially those dealing with the use and application of new materials as they come on the market.

192—PLUMBING: THEORY AND DRAWING 5

Water supply; artesian wells and boreholes; pumping appliances in use. Automatic electric pumps; air-lift pumps and compressors.


193, 194—PLASTERING: PRACTICE AND THEORY 1

Uses of hawk, plastering trowel, handfloat, gauging trowel, margin trowel, lath hammer, level, plumb and bob, plumbing rule, reel and line, joint rules and small tools, stockbrush, scratcher and dasher. Use of hawk and trowel and dasher on first, or scudding coat. Plumbing and ranging and forming screeds on short and low
walls, with plumb rule and bob. Plumbing and ranging, hanging line and bob for high and long walls, fixing the dots. Applying the second or floating coat; use of floating rules. Finishing of skimming coat of lime, putty, and plaster of Paris. Mortars: Coarse and fine; wall and ceiling mortars; use of hair in mortar. Proportions of lime, putty and sand in the different mortars. Limes: Lump lime, hydrated lime, slaking lump and hydrated lime. Lathing: Method of fixing laths, hand-split and sawn; different classes of laths, lathing on flat and circular partitions and ceilings. Expanded metal lathings, hyrib, for internal and external plastering. Patent plasters, their under coats and finishing coats. Floating and finishing external angle staffs in Keene's cement or hardwall plaster. Floating and finishing breaks to chimney breasts; squaring in for floating and finishing piers. Making of simple running moulds, and setting out same. Building up the moulds; running the moulding on the bench and in situ. Mitreing mouldings; use of joint rules and small tools. Setting out, running and moulding and forming simple panels in plaster of paris. Fibrous plaster slabs: (a) plain finished, (b) rough for skimming. Setting out reverse cornice moulds. Running reverse cornice moulds. Casting from reverse moulds. Making a casting mould for the original cornice. Fixing fibrous plaster cornices and wadding the mitres and joints. Running cornice "in situ"; forming the screeds fixing the rules. Circular mouldings run with a radius on bench. Levelling ceilings: (a) flat. (b) with beams. Plumbing and ranging beams forming the soffit. Running bead moulding on beams. Gelatine moulds.

195—PLASTERING: PRACTICE AND THEORY 2

Nature of sand. Ferric hydroxide in sand. Other impurities. Simple tests. Lime: Lump lime, hydrated lime, slaking lump and hydrated lime. The proportions of lime, putty and sand in wall mortars. The addition of hair in ceiling mortar to be used in lath work. Expanded metal lathing to beams; concave and convex surfaces; fixing to wood joists and steel furring. Finishing in greycoating, and substitutes for greycoating. Plumbing and ranging walls for sunk panels. Running parting beads and skirting mouldings. Floating and finishing walls. (a) ordinary 3-coat work, (b) finishing

in Keene's cement, (c) hardwall plaster, (d) for immediate use. Assembling running rules and fixing for patent cement reveals. Moulded sunk panels to beams with plain band on outside. Running a moulding of a staff bead or ovolo. Moulding on angles to reveals of windows or other openings. Bullnosed or chamfered angles, hand or mould methods. Running cornices in situ; forming the screeds and fixing the running rules; fixing enrichments. Moulding and casting enrichments in wax. Moulding and casting enrichments in gelatine moulds. Different kinds of enrichments fixed in cornices. Reverse cornice moulds; method of forming, and casting from. Making a casting from the original mould, and forming bed for enrichments. Wet and dry or pebble dashing. Materials for ground work and finishing. Running cornice or moulding for external work on brick or concrete core. Fixing the nib and running rules. Forming quoins, plain, moulded, and chamfered. Forming sinking: (a) by the runs or mould method; (b) with sinking rules. Segment and semi-circular arches. Plain arris or moulded. Finding the centre. Forming the screed. Fixing the mould. Moulded soffits to segments and semi-circular arches, sunk and raised. Mouldings run on concave or convex templates or drum. Elliptical moulding run on template or rib. Running base and cap moulding. Square and circular. Piece moulding, caps and bases. Waste mouldings from clay models. Moulding acanthus leaf or similar ornament in wax from plaster-cast. Setting out panel ceilings to be formed in fibrous plaster. Fixing wadding, and stopping fibrous plaster ornamental ceilings.

196, 197—PLASTERING: PRACTICE AND THEORY 3. 4.


198—FREE DRAWING

1. Free drawn simple letter forms, single stroke and sans serif Roman and Gaelic types as well as manuscript pen lettering (capitals and lower case). Practice in layout of worded message and simple posters.

2. Elementary perspective of the cube and cylinder and its application to representational drawing of objects based on these forms:—Represenntational drawing (including object and memory, figure drawing and drawing from natural forms) in various media, pencil, charcoal, pen and ink. Drawing from antique casts—historic ornament, various parts of human form and animal forms.

3. The standard primary colours and neutrals—harmonious colour combinations—application to pattern and poster work.

4. Border and all over patterns based on repeated units as letters and numerals, geometrical and cut out shapes, etc.

5. Water colour sketching.

199—PAINTING AND DECORATING: PRACTICE 1


Plain painting. Simple mixing in oil and flat tints. Care of tools and brushes. Setting out and preparing for standard proportioned Roman capitals and lower case. Plain painting in distemper tints of two or more geometrical figures. Colour contrasts. Thickness and shadings for modern Roman capitals. Brushwork for co-ordination of hand and eye. Setting out simple workshop measurements of panels for cutting-in brush exercises. Setting out standard numerals in keeping with block and Roman capitals. Undercoatings in oils; plain and ornamental surface treatments. The "lower" case letters drawn in conjunction with their respective capitals. Ground work and undercoatings required for the production of the popular woods in graining.

200—PAINTING AND DECORATING: THEORY 1


201—PAINTING AND DECORATING: PRACTICE AND THEORY 2

(a) Practice

202—PAINTING AND DECORATING: PRACTICE AND THEORY

(a) Practice

Setting out and painting a Roman alphabet. Production of signs, posters and inscriptions in Roman and Block lettering. Interlacing ornament; the spiral and other forms of radiating ornament with pencil and paint. Painting and producing designs from similar motifs for mural execution. Design and use of multiple stencil plates. Positive and negative treatments of foregoing. Colour effects leading to imitative marble effects. The execution of the silver grain in oak. The production of sap markings and other timbers. Effects obtained by use of overgrainers, steel, combining, rollers, etc. Measurement, trimming, cutting and hanging of patterned papers. Various after-treatments for wall hangings.

(b) Theory


203—PAINTING AND DECORATING: PRACTICE AND THEORY

(a) Practice

(b) Theory


During the above Course of Lectures attention will be given to new Decorative Processes as they come on the market.

204—CABINETMAKING: PRACTICE AND THEORY 1

(a) Practice

Making of the fundamental joints and their application to good cabinet construction. Halved and bridle joints, mortise and tenon joints, dovetail joints, glued joints, etc. These joints applied in the making of small articles of good design and utility.

(b) Theory

Construction and uses of the principal tools; grinding and sharpening. The nature, properties and sources of the more common woods, including growth, felling, conversion, seasoning, etc. Joints used in cabinetwork. Glue and casein; preparation and use. Workshop appliances and trade terms. The fitting and fixing of hinges, locks, handles, etc. Preparation of working drawings, full size and to scale. Oblique and isometric projection. Simple problems in geometry as applied to cabinetwork.

205—CABINETMAKING: PRACTICE AND THEORY 2

(a) Practice

Making of larger pieces of work, involving the application of various cabinet joints. Veneering on flat and shaped work. Inlaying of strings, bandings and simple shapes. Working of simple mouldings, etc.

(b) Theory

Choice of suitable woods for various purposes, cutting lists and calculations. Uses and maintenance of tools. The setting out of more advanced cabinet joints. Drawer and door framing details. Simple table and carcase construction; built-up cornices, surbases and plinths. Building up of shaped work. Preparation of grounds and veneers for flat and shaped work; appliances and methods used. Cabinet metal fittings; different varieties and uses. Heights and sizes of furniture for particular uses. Preparation of working drawings. Illustration of terms. Enlarging diminishing of mouldings, etc.

206—CABINETMAKING: PRACTICE AND THEORY 3

(a) Practice

Further application of Second Year Syllabus in the making of more advanced examples of good cabinetwork.

(b) Theory


207—CABINETMAKING: PRACTICE AND THEORY 4

(a) Practice

In this class students are allowed freedom in their choice of articles, and are encouraged to make more difficult and larger
examples of good cabinetwork, with veneer as a means of decoration on both flat and shaped work.

(b) Theory


208—COACH AND MOTOR BODY BUILDING: PRACTICE 1


209—COACH AND MOTOR BODY BUILDING: THEORY AND DRAWING 1


210—COACH AND MOTOR BODY BUILDING: PRACTICE 2


211—COACH AND MOTOR BODY BUILDING: THEORY AND DRAWING 2


212, 214—COACH AND MOTOR BODY BUILDING: PRACTICE 3, 4


213, 215—COACH AND MOTOR BODY BUILDING: THEORY AND DRAWING 3, 4


216—COACHTRIMMING: PRACTICE AND THEORY 1


217—COACHTRIMMING: PRACTICE AND THEORY 2


218—COACHTRIMMING: PRACTICE AND THEORY 3


219—COACHTRIMMING: PRACTICE AND THEORY 4

220—COACHPAINTING: THEORY AND PRACTICE 1

(a) Theory

(b) Practice
Preparation of work; cleaning down with pumice. Brick and waterproof papers. Priming; stopping up; brush filling; stain or guide coat.

221—COACHPAINTING: THEORY AND PRACTICE 2

(a) Theory
How to make surfacing coat after pumicing. Application of surfacing coat. How to make the ground colour. How to make up the glazing coat. Method of applying hard drying varnish. Care in the flatting down of surface before application of finishing varnish. Advance drawing of letters of various types used in the trade.

(b) Practice

222—COACHPAINTING: THEORY AND PRACTICE 3

(b) Practice
Fine lining with whip and sword liners. Picking out. Advanced lettering and painting of designs for use on traders’ vehicles.

(a) Theory
Use of mediums used in the trade. Use of driers. Making up colours from any pigments. Drawing of designs from blackboard.
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- Mechanical Engineering
- Motor Car Engineering
- Marine Engineering
- Naval Architecture
- Mechanical Engineering Trades
- Motor Car Engineering Trades
- Smithwork and Art Ironwork
- Brazing
- Oxy-Acetylene and Electric Welding
- Printing and Book Production
- Day Junior Technical Courses
- Day Apprentice Courses

### CAPEL STREET TECHNICAL INSTITUTE
- Continuation Courses: Post Office Messengers
- Manual Instruction: Woodwork, Metalwork
- Day Junior Technical Courses
- Trade Classes: Tailoring, Bootmaking

### CABRA TECHNICAL INSTITUTE
- Day Junior Technical School
- Day School of Commerce
- General Commercial Subjects
- Metalwork
- Domestic Science and Housecraft
- Physical Training
- Woodwork
- Languages
- Gardening

### INSTITUTE OF SCIENCE AND TECHNOLOGY—KEVIN ST.
- Pure and Applied Mathematics
- Pure and Applied Physics
- Pure and Applied Chemistry
- Physical Chemistry
- Bio-Chemistry: Botany
- Bacteriology: Biology
- Pharmacy
- Industrial Technology: Manufactures
- Illuminating Engineering
- Bootmaking
- Ophthalmic Optics
- Electrical Engineering and Allied Trades
- P.O. Engineering Technology
- Instrument Making
- Radio Engineering and Service Work
- Radio Telegraphy (Radio Officers)
- Air Navigation
- Radar and Radar Systems
- Bakery Science and Practice

### PARNELL SQUARE TECHNICAL INSTITUTE.
- Day School of Commerce and Retail Distribution (Girls)
- National Health Insurance
- Preliminary Examinations
- Physical Training (Girls)

### HARDCOURT STREET SCHOOL OF DOMESTIC SCIENCE.
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### PEMBROKE TECHNICAL INSTITUTES
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- Languages
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### THE HIGH SCHOOL OF COMMERCE.
- Rathmines Road. Phone 92774.
- JUNIOR DAY SCHOOL COURSES.
- Preparatory (Boys and Girls). Commerce (Boys and Girls). 1st and 2nd Year.
- SENIOR DAY SCHOOL COURSES.
- Continuation Education for Youths in Employment.
- Commercial Education for Youths in Employment.
- Retail Practice for Trainees (Boys)
- EVENING COURSES
- Accountants and Auditors.
- Advertising and Publicity.
- Art in Industry and Commerce.
- Banking and Finance.
- Bookshop Practice and Literature.
- Clerical Occupations.
- Company Secretaries.
- Cost and Works Accountants.
- Economics and Social Science.
- Government Accountancy and Finance.
- Income Tax Law and Practice.

### RATHMINES SCHOOL OF DOMESTIC ECONOMY
- Rathmines Road. Phone 92782.
- FULL-TIME DAY COURSE.
- Preparatory (Girls).
- MORNING, AFTERNOON AND EVENING COURSES.
- Cookery.
- Cookery Demonstrations.
- Housecraft.
- Dressmaking.
- Needlework.
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- Knitting.
- Household Management.
- Knitting.
- Laundry.

### ST. MARY’S COLLEGE—CATHAL BRUGHA STREET.
- Diploma Course (Training Teachers).
- Hotel and Institutional Cookery.
- Apprentice Chefs Course.
- Evening Classes—Cookery, etc.

### MARINO TECHNICAL INSTITUTE.
- General Commercial Subjects
- Metalwork and Woodwork
- Languages
- Domestic Science and Housecraft
- Day Junior Technical School (Boys and Girls).
- Day School of Commerce.

### HOWTH TECHNICAL INSTITUTE.
- Domestic Science
- Art
- Leatherwork
- Woodwork

### CHATHAM ROW SCHOOL OF MUSIC (Day and Evening Classes).
- Pianoforte.
- Orchestral Playing.
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- Voice Production.
- Theory.
- Double Bass.
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