

UNIVERSITY COLLEGE,  
SHAKESPEARE STREET,  
NOTTINGHAM.

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*DEPARTMENT OF TEXTILES.*

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# PROSPECTUS

OF

FULL TIME and PART TIME COURSES

IN

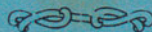
HOSIERY.

DYEING AND FINISHING.

TEXTILE TESTING.



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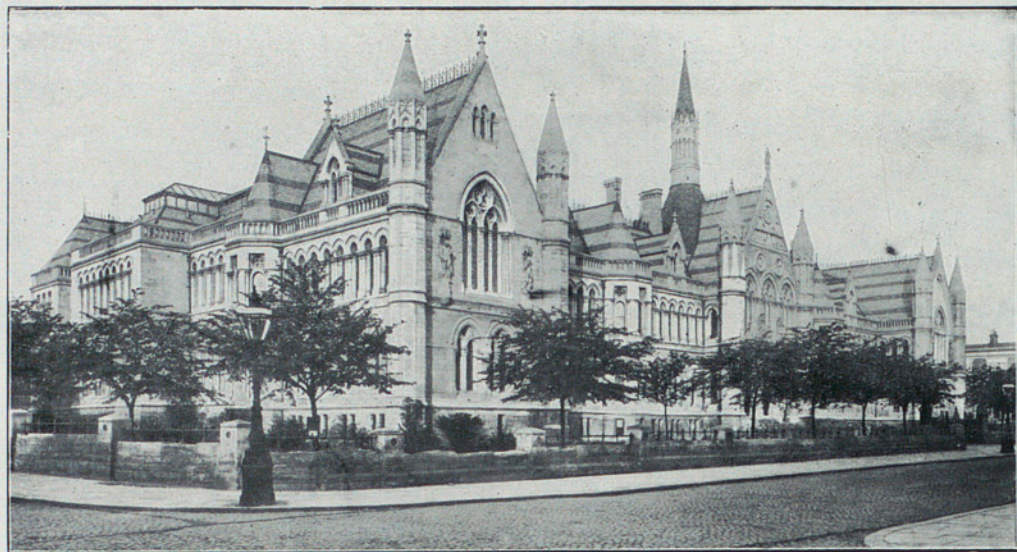


*Particulars of all Courses, Fees, Residence,  
etc., may be obtained on application to the  
Registrar.*

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UNIVERSITY COLLEGE, UNIVERSITY PARK, NOTTINGHAM  
(Arts and Pure Science Buildings).



UNIVERSITY COLLEGE, SHAKESPEARE STREET, NOTTINGHAM  
(Applied Science and Technology Buildings).

# UNIVERSITY COLLEGE, NOTTINGHAM.

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## COURSES OF STUDY.

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The College provides :—

1. DEGREE COURSES in preparation for the examinations of the University of London in Arts, Economics, Commerce, Divinity, Pure Science, Agriculture, Engineering and Mining.

2. DIPLOMA COURSES in preparation for the examinations of the Institutes of Chemistry and Physics and the Pharmaceutical Society; the University of London Geographical Diploma; the National Diploma in Mechanical Engineering; and the Diplomas of University College, Nottingham, in Commerce, Social Study, Adult Education, Geography, Engineering, Petroleum Technology, Mining, Mine Surveying, Hosiery, Dyeing and Finishing; also for the Colliery Managers' Certificate, the 1st Medical and 1st Dental examinations, Civil Service examinations, and Elementary and Secondary Teacher's Certificate.

Special arrangements are made for Post-Graduate and Research work.

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Prospectuses, giving full particulars of all Courses and Classes, may be obtained from the Registrar.

By means of its Advisory Committees, composed of prominent representatives from all branches of the textile industry, the Department is kept in close touch with new developments and practical requirements.

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The department has been very successful in finding positions with good prospects for students who have completed their course.

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The departmental library is available for students. This contains a comprehensive collection of books on all branches of the textile industry.

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During the course, many instructive visits are arranged to yarn spinning mills, hosiery factories, dyeing and finishing works, and hosiery machine builders.

## DEPARTMENT OF TEXTILES.

Head of the Department : PROFESSOR W. DAVIS, M.A.

## Lecturers and Demonstrators :

*Textile Testing :*

J. BARR, A.T.I.

*Hosiery Manufacture :*

W. E. BOSWELL, A.T.I.

G. H. BUCKLEY, A.T.I.

*Dyeing and Finishing.*

S. R. TROTMAN, M.A., F.I.C.

L. G. RICHARDSON.

Full time and part time students in the Textiles Department attend part of their courses in the following Departments of the College :—

*Modern Languages :*

Head of the Department : PROFESSOR E. WEEKLEY, M.A.

*Economics and Commerce :*

Head of the Department : PROFESSOR A. W. KIRKALDY,  
M.A., B.LITT., M. COM.

*Chemistry :*

Head of the Department : PROFESSOR F. S. KIPPING,  
PH.D., D.Sc., F.I.C., F.R.S.

*Physics :*

Head of the Department : PROFESSOR P. E. SHAW,  
M.A., D.Sc.

*Engineering :*

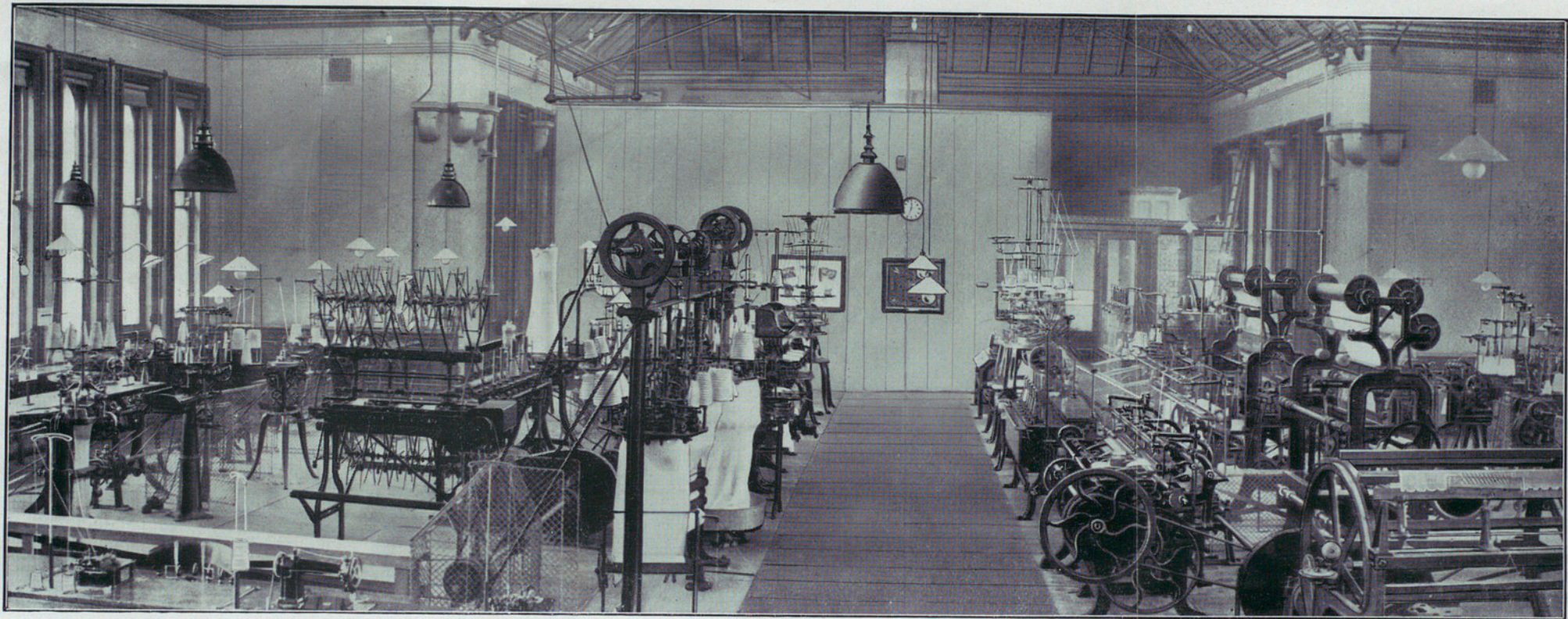
Head of the Department : PROFESSOR C. H. BULLEID,  
O.B.E., M.A., A.M.I.C.E., M.I.MECH.E.

*Registrar :*

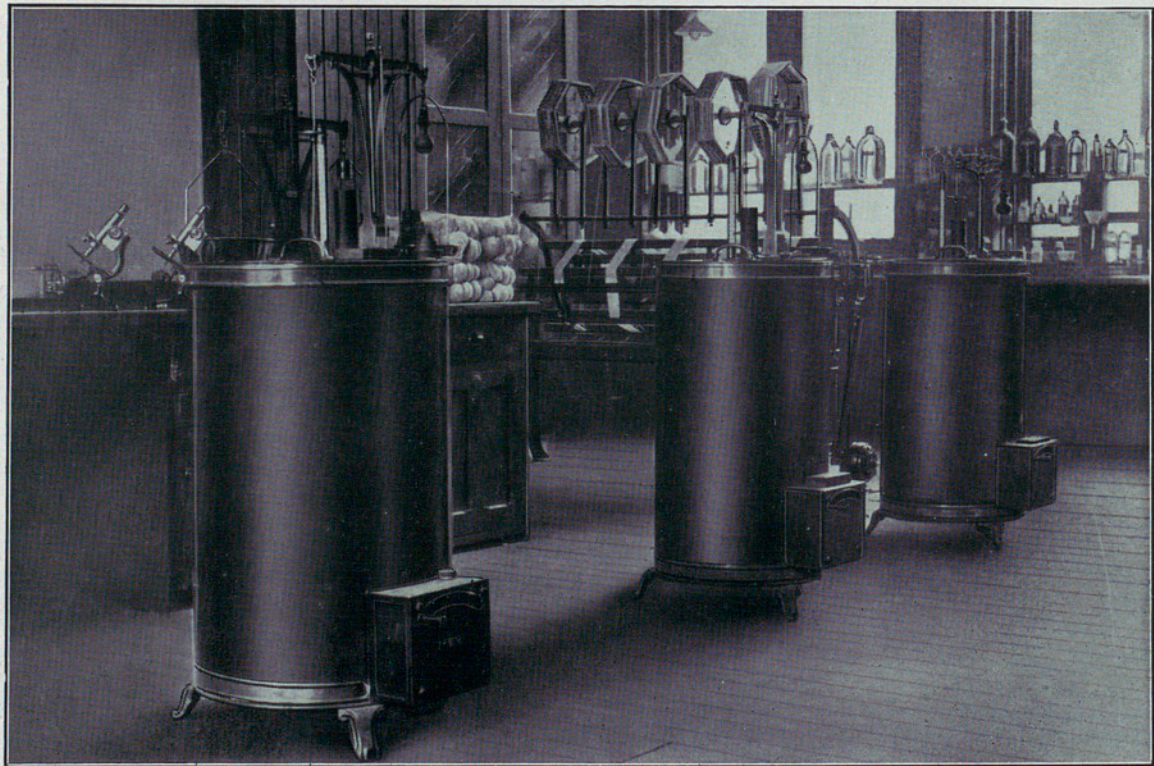
J. E. SHIMELD, F.C.I.S.



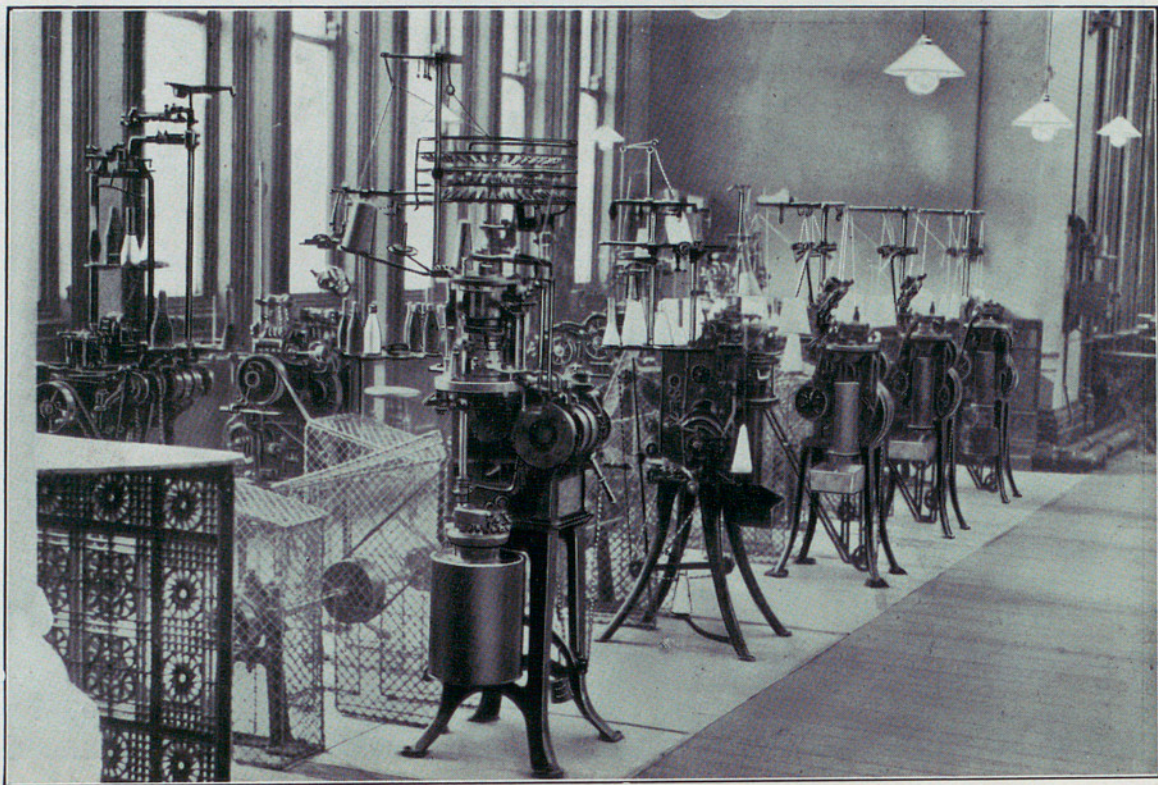




THE MAIN HOSIERY LABORATORY.



TEXTILE TESTING BUREAU



SEAMLESS HOSIERY MACHINERY

## HOSIERY MANUFACTURE.

The College affords unrivalled opportunities to all employed in the knitting industry to obtain complete courses of instruction relating to the production, manufacture and dyeing and finishing of hosiery fabrics. The plant comprises machines and apparatus of the latest type and the lecture courses combine with practical work to give the students a thorough knowledge of the trade.

The Session commences in October and terminates at the end of June. It is divided into three terms.

Before entry students must satisfy the Principal and Head of the Department of Textiles that they have reached a standard of education sufficiently high to enable them to profit by the courses at the College.

### FEES.

Full-time Diploma Courses in Hosiery Manufacture and Dyeing and Finishing:—£10 10s. 0d. per term.

Part-time Courses in Hosiery Manufacture and Dyeing and Finishing (four hours weekly):—£1 1s. 0d. per term.

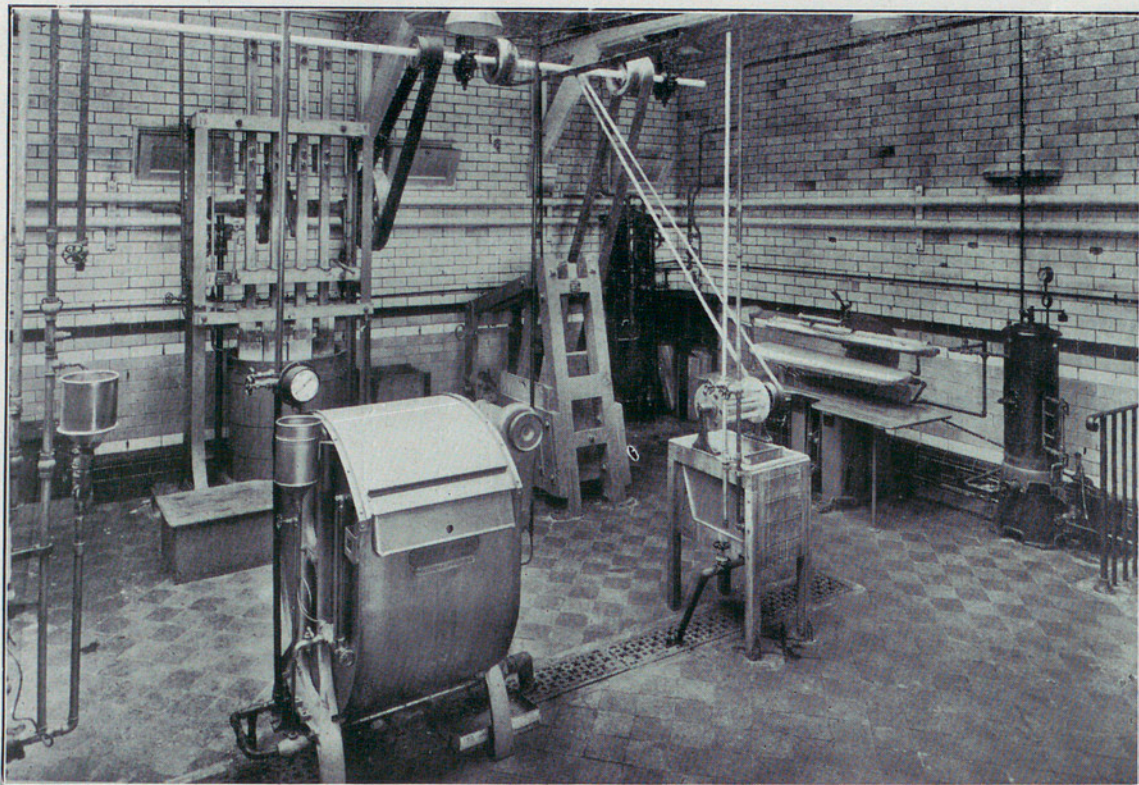
Other Courses can be arranged to suit the needs of students.

All full time students pay a registration fee of 20s. and Union fee of 25s.

### DIPLOMA COURSES.

(A) Diploma Course in Hosiery Manufacture designed for those who desire to qualify for the control of hosiery manufacturing businesses. This includes a full-time scientific and technological training extending over a period of two years of three terms each.

(B) Part-time Courses in Hosiery Manufacture for promising students selected from the hosiery factories of the district, the minimum time for this being four hours weekly during the three terms of the College session for two years.



SCOURING, MILLING AND DYEING MACHINERY

(C) Full-time Diploma Course in Dyeing and Finishing for students who wish to qualify as dyeworks' managers or textile chemists.

(D) Full-time Diploma Course in Commerce with supplementary courses in Hosiery Manufacture and Textile Testing extending over three years.

The following gives an outline of the subjects proposed for each year of the course. In fixing the curriculum, consideration will be given to the previous education of the students. Some subjects may be omitted and alternative subjects taken after consultation with the Head of the Department.

### COURSE FOR DIPLOMA IN TEXTILES: HOSIERY MANUFACTURE.

#### First Year.

Textile Raw Materials.

Textile Testing.

Hosiery Manufacture (Lectures and Practical).

Fabric Analysis.

Dyeing and Finishing.

Chemistry.

Either Accounting or a Modern Language or Colour and Design.

#### Second Year.

Hosiery Manufacture (Lectures and Practical).

Hosiery Machine Mechanism.

Textile Calculations.

Textile Testing.

Hosiery Fabric Analysis.

Dyeing and Finishing.

Either Modern Language or Commercial Organisation or Colour and Design.

## SYLLABUS FOR HOSIERY MANUFACTURE.

The following gives an indication of the subjects to be covered during the two years' course in Hosiery Manufacture. All lecture courses will be supplemented by adequate practical experimental work on the plant of the department which is under the charge of demonstrators who have had factory experience.

**Textile Calculations.** Yarn numbering systems, counts of folded yarns, plating calculations, average counts in a fabric, weight percentages of mixture articles, costing of raw materials and yarns, setting of knitted fabrics, calculations relating to shafting, speeds of frames and production on the various types, calculations for warp-loom trade, costing of all classes of hosiery and underwear.

**Raw Materials.** Study of the properties of the raw materials used in hosiery, practical work in judging and valuing these materials.

**Spinning.** Outline of the chief operations in yarn manufacture and study of the chief types of yarns used in the hosiery trade. Wool sorting and scouring, teasing and subsequent processes.

**Hosiery Manufacture.** Study of the various systems of hosiery manufacture, full-fashioned, circular and seamless branches of the trade; methods of making and putting together all classes of hosiery articles including shirts, pants, cardigan jackets, seamless hose, full-fashioned hose, scarves, gloves, ties and fancy stitch garments made on the flat knitting machines. Methods of trimming and making up the garments.

Frame gauging and fabric texture, warp loom fabrics, Imperfections in hosiery and remedy for same.

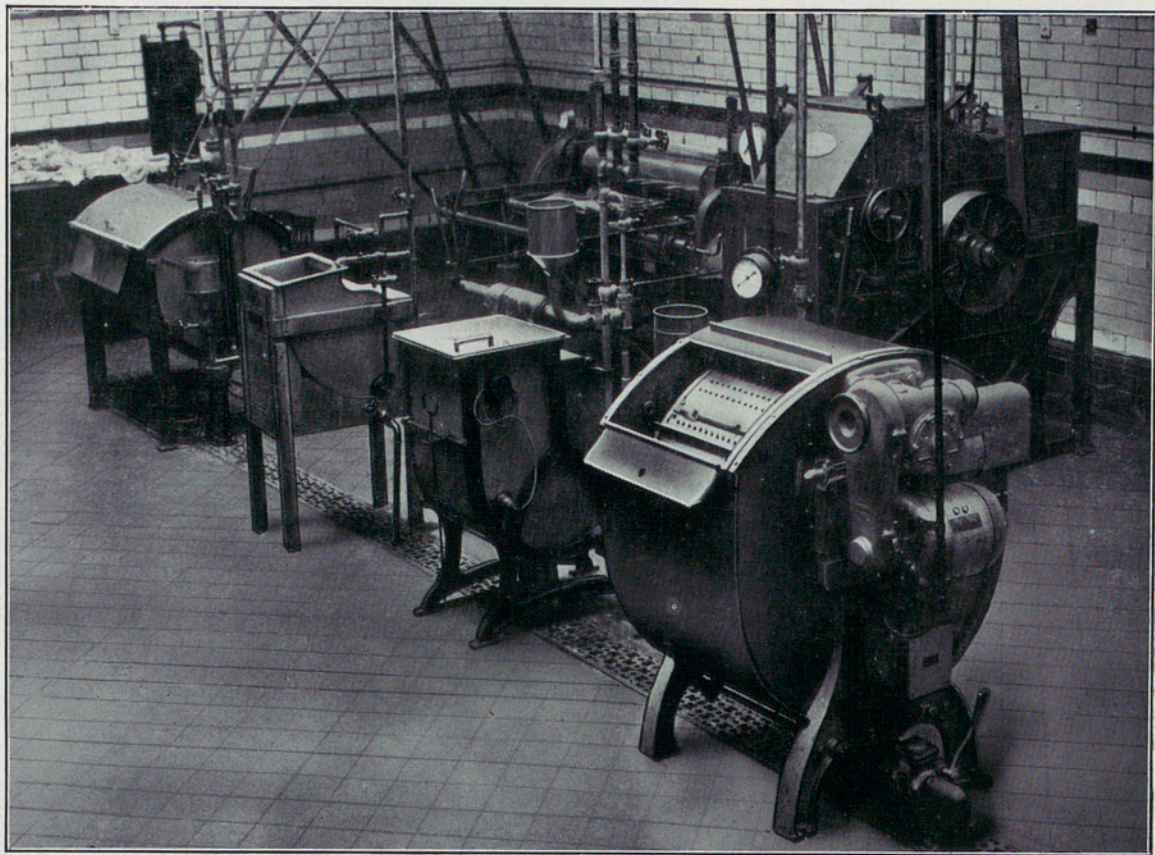
**Textile Testing.** Practical work on the apparatus for testing yarns for counts, strength and stretch. Conditioning of yarns. Microscopic examination of fibres, yarns and fabrics, chemical tests for textile fibres. Experimental dye tests.

**Hosiery Machine mechanism.** This work will embrace a detailed study of all machinery used in the department, including the methods of yarn feed and wind-up tackle, adaptability of the machine for various purposes, drawings of the chief functional parts.

**Fabric Analysis.** The analysis of all classes of knitted fabrics and garments for their accurate reproduction in the factory. Estimation of the machine gauge, yarn size, nature of stitch, ascertaining designs of fancy fabrics and showing how they can be produced on the frame.

**Design and Colour.** Study of the theory of colour, blending of colours and practical work on the hand cards. Principles of colour, harmony and contrast, analysis of colour effects in fabrics. Representing all classes of lace, tuck, vertical striping and pearl stitch designs on squared paper and study of the methods in which these can be made on the machine. Principles of form and points to be observed in designing for tuck, lace and embroidered fabrics.

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PRactical DYEING AND FINISHING LABORATORY.  
Arxiu General de la Diputació de Barcelona. Biblioteca

**COURSE FOR DIPLOMA IN TEXTILES:  
DYEING AND FINISHING.**

First Year Subjects:—

Textile Testing.  
Dyeing.  
Hosiery Manufacture.  
Chemistry.

**Dyeing.—**

**First Year.** Identification of textile fibres, water purification and softening, scouring and milling of hosiery, principles of drying. Various methods of bleaching on wool and cotton.

Method of dyeing acid colours on wool, effect of adding various assistants to the dyebath, mixing of colours for shade dyeing.

Principles of finishing textiles, brushing, baling, pressing and machines used in dyeing, scouring and milling.

Second Year Subjects:—

Textile Investigation.  
Technical Analysis.  
Organic Chemistry.  
Colour Matching.  
Evaluation of Dyestuffs.  
Identification of Dyestuffs.

**Dyeing.—**

**Second Year.** Application of the acid mordant dyestuffs, method of applying mordants to wool, silk and cotton.

Direct colours on cotton, developed colours.

Sulphur dyes on cotton, topping with basic dyestuffs.

Vat dyes on cotton and wool.

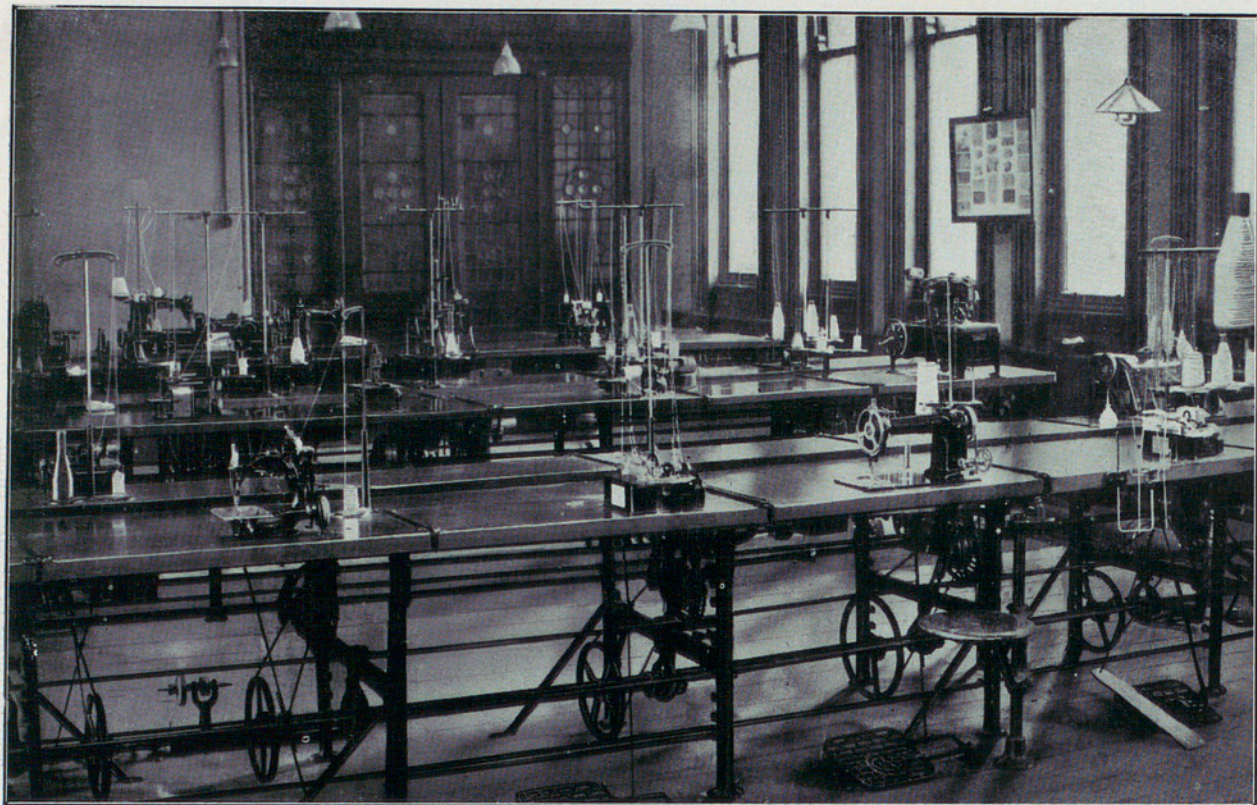
Basic and direct cotton dyes.

Aniline black and its application.

Chemical nature of dyestuffs. Intermediates.

Theories of dyeing, review of the various classes of dyestuffs.

Chemistry of soaps, acids, alkalis and other chemicals and methods of testing them.



SEWING AND SEAMING MACHINES

### PART-TIME COURSES IN TEXTILES.

These courses are arranged for students engaged in the textile industries who are allowed by their firms to attend at certain times during the day for the three College terms; the minimum course is four hours weekly for two years.

#### TIME TABLE.

<b>Textile Testing.</b>	Monday, 9—10.30.
	Thursday 2.15—3.30.
<b>Hosiery Manufacture.</b>	Grade I. (a) Monday, 2—4.
	Thursday, 2—4.
	(b) Tuesday, 11—1.
	Thursday, 11—1.
	Advanced. Tuesday, 2—4.
	Friday, 2—4.
<b>Dyeing and Finishing.</b>	Lectures. Monday, 4.5.
	Thursday. 4.5.
	Practical Tuesday, 2—4.
	Thursday, 11—1.

#### APPARATUS FOR TEXTILE TESTING.

Microscopes and full set of mounted slides of fibres, yarns and fabrics—Wrap reel and yarn balances for testing counts—Machines for single thread testing—Twist testing machines—Sets of hand cards—Range of raw materials and yarns—Conditioning ovens—"Nesbit" Yarn Tester—Hank measuring machine. Projecting microscope—Autographic single thread tester for strength and twist—ballistic strength tester—moscrop yarn testing machine—Shorter and Hall tester—cloth testing machine.



TEXTILE RESEARCH LABORATORY

## HOSIERY MANUFACTURE.

Loop wheel circular frame—Terrot bearded needle circular frame—Cotton's patent rotary frame—"Minotaur" circular machines, rib and plain (Mellor Bromley)—Loop-wheel circular machine (Model)—Blackburn circular machine, 8-feed Blackburn circular rib frame—Berridge scarf machine—Tie machine by the Standard Machine Company—Tie Machine (Wildt) Lebocey circular frame, Berthelot frame—O.M.I.M. spring needle circular—36 G. Cotton's patent legger frame.

**Winding Machines:** Blackburn's model — 6 spindle winding machine (Wildt)—2 Universal winding machines, "Collier" hank winder, Schweiter and "Arachne" artificial silk winding machines; warp mill and two warp looms. Doubling machine (Schweiter).

**Hand Machines:** Foster flat knitting machine—Harrison flat knitter—1 Dubied flat knitter—1 narrow width glove knitter (Dubied)—1 Griswold stocking knitter (Berridge)—1 stocking knitting machine (Harrison)—1 flat knitter (Schaffhouse Knitting Machine Co.)—1 flat knitter (Donner)—1 Jacquard flat knitter (Dubied)—double system Jacquard—autostriper.

**Automatic Hosiery Machines:** "K" Model and "B5" automatic hose machines (Blackburn)—"Maxim" machine and french rib welt machine, "George" machine for children's hosiery and "Race" rib machine (Wildt)—Simplex and Autoswift machines (Spiers)—"Record" hose machine (Wildt)—Hepworth looper (Blackburn)—"W" machine (Stibbe) Trent vertical stripe hose machine, "Standard" fancy hose machine, "Komet" knitting machine.

## TRIMMING AND MAKING-UP.

Messrs. Wilcox and Gibbs have installed a bench of their special machines including the overlock, lockstitch and "Flatlock" machines—Messrs. The Singer Sewing Machine

Co. have installed twelve of their specialities such as lock-stitch, button sewing and buttonholing machines and other well known types—Seaming and linking machines (Hague).—“Morrow” Machines—(O'Brien).—Cornely and Irish embroidery machines—Reece button-hole machine.

### DYEING AND FINISHING.

“Paramount” hosiery forms—Baling and turning machines—“Braithwaite” press.

Experimental apparatus for scouring, dyeing and bleaching including 20 experimental sets of baths for dye trials—6 dye vessels for bulk dyeing.—1 Smith-Drum dyeing machine.—1 American laundry dyeing machine—Hank dyeing machine, piece dyeing machines (Longclose)—“Kilburn” mill, fulling stocks and scouring dolly—Permutit water softener—Calender, brushing and baling machines by Pegg—hydro-extractor—2 Injector hosiery dyeing machines—1 Pegson uniflow, 1 duoflow—1 Ibis injector machine—Hoffmann press.





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